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THE EARLY DIAGNOSIS OF SYPHILIS

A CORRELATION OF CLINICAL AND LABORATORY METHODS

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This paper is an analysis of 115 cases of genital chancres showing the correlation of the three methods at our disposal for making an early diagnosis of syphilis: dark-field examination, Wassermann reaction, and clinical evidence. The laboratory diagnosis alone of syphilis presents pitfalls. The dark-field examination is of paramount importance in the early diagnosis of an untreated chancre, but its usefulness is greatly lessened as the majority of genital lesions have been treated locally before the dark-field apparatus is resorted to.

The Wassermann reaction is indispensable in syphilis, but in later stages than the initial lesion. This reaction is most important in the differentiation of pathologic conditions simulating subsequent syphilitic lesions. A positive Wassermann reaction is the serologic expression of the generalization of the disease.

If a chancre is seen while the Wassermann reaction is not yet positive, it is not necessary to await its appearance. To await its appearance as corroborative diagnostic evidence is much like the obsolete procedure of awaiting the appearance of the secondary eruption. On the other hand, reliance on clinical evidence alone is insufficient, since chancres vary greatly in their clinical manifestations. Indeed, some chancres may be so atypical that reliance on laboratory tests becomes imperative in order to make a correct diagnosis. Although it is not possible to diagnose early all cases of genital chancres by any of the three methods, the proper correlation of the three methods promulgates differential diagnosis of genital lesions.

The importance of the early institution of treatment in the cure of syphilis places the burden of proof on the physician who classes any genital lesion as nonsyphilitic. This diagnosis should not be made until all three diagnostic methods are negative.

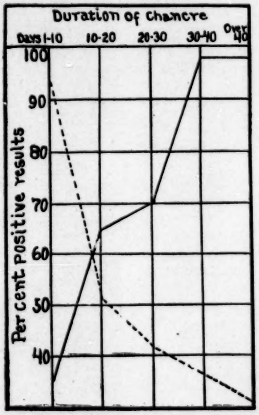

Fig. 1.—Comparison of Wassermann reaction and dark-field examination: solid line, positive Wassermann reaction; broken line, positive dark-field examination.

DARK-FIELD EXAMINATION

In an untreated and uninfected genital lesion, the absence of *Spirochaeta pallida* under the dark field is presumptive proof that the sore is not a chancre. A single negative finding, however, should never be taken as conclusive evidence, and the suspected lesion should be reexamined at daily intervals. Unless the local condition demands treatment, the genital lesion should be dressed only with physiologic sodium chlorid solution, boric solution, or simply warm water. No antiseptic treatment should be instituted until the diagnosis is established beyond a doubt. This is especially important because local treatment with a spirocheticidal drug greatly decreases the percentage of positive findings. The commonly used spirocheticidal drugs for local application are silver nitrate, mercury, iodin, copper sulphate, and iodoform. I have observed that spirochetes become very scanty on the surface of the chancre after one application of silver nitrate, which is the most powerful spirocheticide. The dark-field examination became negative almost universally after one application, although it was found that discontinuance of its use allowed a reappearance of the spirochetes on the surface. Two daily applications of calomel powder also caused the spirochetes to disappear from the secretion of the chancre. Here again they reappear if its use is discontinued. Daily rubs with 1 dram of unguentum hydrargyri are required for at least one week before the dark field becomes negative. It may be mentioned here that a single injection of arsphenamin usually causes spirochetes to disappear from the secretion of chancres within from six to eight hours. Infection of a chancre with pyogenic organisms may sometimes cause the spirochetes to disappear from the surface of the chancre, or reduce their number so that they can be demonstrated only with difficulty.

In previously treated chancres, the serum from the deepest part of the sore should always be examined, as it is unlikely that spirochetes will be found near the surface. When the dark-field examination is negative, the application of alcohol to the surface of a chancre may be of service by dilating the lymphatics and so bringing spirochetes to the surface of the lesion.

In Table 1 is shown the result of dark-field examination of 115 cases of genital chancres made at from

one to more than forty days after the first appearance of the sore. In thirty-three chancres examined within ten days of their appearance, the dark field was positive in thirty-one cases, or 93.9 per cent. In seventeen chancres examined within from ten to twenty days of their appearance, the dark field was positive in nine cases, or 52.9 per cent. In twenty chancres examined within from twenty to thirty days of their appearance, the dark field was positive in ten cases, or 50 per cent. In five chancres examined within from thirty to forty days of their appearance, the dark field was positive in three cases, or 60 per cent. The small number of cases in the last series probably explains the high percentage. In forty chancres examined after forty days of their appearance, the dark field was positive in twelve cases, or 30 per cent. The incidence of positive dark-field examinations became less in proportion to the duration of the chancre. Of the 115 chancres with an average duration of 33.4 days, sixty-five, or 57 per cent., were positive. This low percentage may in part be due to the fact that 66 per cent. of the chancres in this series had received local treatment previous to the time they were first seen. An added factor is the long average duration, as the longer the duration of the chancre, the more likely it is that its surface will heal. Furthermore, the possibility of a phimosis developing is greater. The sore is also more likely to have had local treatment, and finally pyogenic infection is more likely to be present.

Fig. 2.—Abrasive chancre shaft: incubation, one month; duration, two days; self treated with iodin; dark field ++; Wassermann reaction —.

An added pitfall in absolute reliance on the use of the dark-field examination is apparent when it is noted that in 25.1 per cent. of the chancres in this series it was not possible to examine for spirochetes because the chancre was concealed beneath an inflamed or adherent foreskin, or the chancre's surface was entirely healed.

THE WASSERMANN REACTION

The value of the Wassermann reaction as an aid to the early diagnosis of syphilis is in proportion to the duration of the chancre. At the time of the first appearance of the sore, this reaction is invariably negative. The percentage of positive reactions gradually increases with the duration of the sore, until a short period before the appearance of the secondary eruption it becomes positive in 100 per cent. Therefore, in the early period of primary syphilis this reaction is not a very valuable diagnostic aid; in the later period, however, the reaction is of considerable diagnostic value. From an examination of Table 2 it is seen that within the first ten days of the appearance of the chancre, the Wassermann reaction was positive in only twelve of thirty-three cases, or 36 per cent. In seventeen cases from ten to twenty days after the appearance of the chancre, the Wassermann reaction was positive in eleven, or 64 per cent. In from twenty to thirty days the Wassermann reaction was positive in fourteen out of twenty cases, or 70 per cent. In the five cases from thirty to forty days after the onset of the sore, the Wassermann reaction was positive in all. In the forty cases existing over forty days, the reaction was positive in all. The average percentage of positive results obtained was 74.

TABLE 1.—DARK-FIELD EXAMINATION OF ONE HUNDRED AND FIFTEEN CHANCRES

Duration of Chancre in Days	Number of Cases	Dark-Field Examination		Local Treatment	Concealed Chancre Beneath Phimosis	Surface Healed	Positive Dark-Field Percentage
		Positive	Negative				
1-10	33	31	2	2	..	..	93.9
10-20	17	9	8	3	2	3	52.9
20-30	20	10	10	8	1	1	50.0
30-40	5	3	2	..	1	1	60.0
Over 40	40	12	28	8	10	10	30.0
Total.....	115	65	50	21	29		57.3

TABLE 2.—THE WASSERMANN REACTION IN ONE HUNDRED AND FIFTEEN CASES OF PRIMARY SYPHILIS *

Duration of Chancre in Days	Number of Cases	Wassermann Reaction		Positive Wassermann Percentage
		Positive	Negative	
1-10	33	12	21	36.0
10-20	17	11	6	64.7
20-30	20	14	6	70.0
30-40	5	5	0	100.0
Over 40	40	40	0	100.0
Total cases.....	115	82	33	74.1

* The Wassermann tests in this series were performed by Capt. Malcolm McBurney, M. C., U. S. Army, base hospital, Camp Upton, according to this technic: A one-quarter Wassermann was performed. The total volume in each test tube was 1.25 c.c., or one fourth of the amount used by Wassermann in the original test. Diagnostic tube: 0.05 c.c. of serum; one fourth of the anticomplementary dose of antigen; complement was titrated at every test; two units of complement were used with the alcoholic antigen and three units with the cholesterolized antigen; physiologic sodium chlorid solution was added up to 1.25 c.c. Control tube: 0.1 c.c. serum; complement according to titration; physiologic sodium chlorid solution was added up to 1.25 c.c.; incubated two hours on ice and one-half hour in the hot water bath at 37 C. Twenty-five hundredths c.c. of sheep's cells and 0.1 c.c. of amboceptor were added to each tube; these were incubated until controls were clear. One-tenth c.c. of amboceptor constituted two hemolytic units. The dilution of antigen used was 1:20.

It is not desirable that the Wassermann reaction be employed as a diagnostic aid in primary syphilis, because the appearance of this test probably means that a general invasion of the spirochetes has taken place. In experimental syphilis this is definitely known to be so. The disease should be diagnosed and treatment instituted before this invasion occurs. The time of appearance of a positive Wassermann reaction in primary syphilis is variable. Hence this test should be made in all cases of chancres.

Fig. 3.—Abrasive papular chancre foreskin: duration, three weeks; treated locally; surface almost healed; dark field — (unsatisfactory); Wassermann reaction ++++.

The sooner the chancre is examined, the more likely it is that the dark-field examination will be positive and the less likely that the Wassermann reaction will be positive. (Fig. 1). Later, however, the converse is true.

GENERAL CLINICAL FEATURES OF A CHANCRE

Before describing the clinical features that differentiate the chancre from other genital sores, it seems advisable to emphasize the need of a new terminology of nonsyphilitic infections. The vital importance of any genital lesion is the possibility of its being syphilitic. Once the lesion is proved to be nonsyphilitic it becomes relatively unimportant. Therefore the more general term of "nonsyphilitic" genital lesion is advocated in

lieu of the loosely applied term "soft chancre" or "chancroid." Venereal sores on the genitalia can be divided into three classes: (1) syphilitic, due to *Spirochaeta pallida;* (2) chancroidal, due to the Ducrey bacillus; (3) pyogenic, due to other organisms. A syphilitic genital lesion is a definite one due to a specific etiologic factor, *Spirochaeta pallida.* Thus diagnosis can be definitely made by demonstrating this organism by dark-field examination. Chancroidal infection is also specific, and is due to the bacillus of Ducrey. A genital sore should not be diagnosed as chancroid unless this bacillus can be demonstrated. This is possible only early in the existence of the sore. The other infectious genital sores may be due to various organisms that have not as yet been isolated. Differential diagnosis is often difficult and sometimes impossible if two or more of the above genital sores exist at the same time.

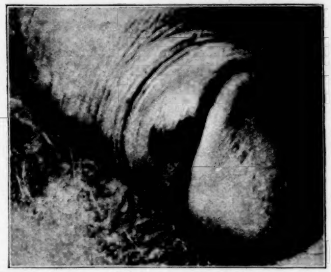

Fig. 4.—Abrasive indurated chancre foreskin: incubation, sixty days; duration, six days; untreated locally; dark field +++; Wassermann reaction —. The surface was covered with a crust and sharply marginated; slight underlying induration.

Of late years in the diagnosis of syphilis the appearance of the chancre has been neglected. With the advance of laboratory methods of diagnosis there has been an unfortunate tendency to depend more on laboratory evidence than on clinical manifestation.

The nomenclature of the different types of chancres is as various as the textbooks on venereal diseases. The nomenclature employed in this paper is an attempt to clarify this subject.

GENERAL CONSIDERATIONS

Incubation Period.—Three weeks is usually given for the incubation period of a chancre. Our experience has led us to believe that in the majority of cases the incubation is between fourteen and forty-two days, with an average of about thirty-three days. The accepted minimum period is ten days and the maximum ninety days.

Multiplicity of the Sore.—The presence of more than one sore is no strong evidence against the lesion's being a chancre. Most textbooks give the impression that a chancre is rarely multiple. By an examination of Table 3, it is seen that of 121 chancres, twenty-one, or 17.3 per cent., were multiple.

Autoinfection.—A chancre is autoinoculable.[1] In man as well as experimentally in animals a second chancre can be produced by reinoculation from the original chancre. This possibility decreases in proportion to the duration of the infection.

1. Klauder, J. V.: Superinfection in Syphilis, J. Cut. Dis. **36**: 515 (Nov.) 1918.

Floor of Chancre.—The floor has the redness of raw beef. There is a considerable amount of serous secretion present. This liberal secretion is a very valuable diagnostic sign. This secretion may dry into a crust which, when removed, discloses the beefy floor. If pyogenic infection occurs, either an ulcer (Figs. 6 and 7) is formed or a membrane results (Fig. 5) and covers the surface of the sore. This membrane is usually "cream green" in color. The floor may remain abrased or it may become closed. This may occur spontaneously or more likely as a result of local treatment.

TABLE 3.—LOCATION OF LESIONS

Location of the Chancre	Number of Cases
Prepuce	55
Sulcus	20
Shaft	15
Glans	9
Frenum	4
Urethra	2
Concealed (phimosis)	16
Total	121
Mixed infection (chancroid and chancre)	3
Multiple chancres	21

Edge of Chancre.—The edge is usually flat and sharply demarcated from the surrounding tissues (Fig. 4). This is an important clinical feature. In another type of the lesion the slightly elevated border may slope toward the eroded center and into the normal tissue. As a result, usually of pyogenic infection, the edge may be raised above the surface of the sore (Fig. 7).

Area Surrounding Chancre.—Usually the tissue surrounding the chancre is normal (Fig. 4). In the event of secondary pyogenic infection, a small zone of inflammation may surround the edge (Fig. 5).

Induration.—When induration is present, it is valuable evidence of syphilis; but its absence does not exclude syphilis. This feature of a chancre is variable. The induration may appear early in the primary stage or late. The older the lesion, the more likely is the induration to be marked. The degree depends in a large measure on the location of the chancre. As the result of pyogenic infection, induration may become less or even disappear entirely.

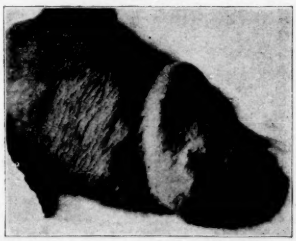

Fig. 5.—Infected abrasive chancre (multiple): incubation, six weeks; treated locally; duration, three weeks; dark field ++; Wassermann reaction ++++. The floor was covered with a membrane "cream green" in color; the edges were on the level with the surrounding tissue; an area of inflammation surrounded the lesion; induration was absent.

Noninflammatory Edema.—When present, this edema is a valuable aid in diagnosis. It may involve the area surrounding the chancre, or the whole prepuce (Figs. 11 and 12). The skin is of a dull livid red or bluish

tint. It feels tough and rubbery. The edema accompanying gonorrhea or a nonsyphilitic septic sore is softer when palpated and duller in color.

Adenopathy.—The majority of adult males have some enlargement of the superficial lymph nodes. Friedlander,[2] in an examination of definitely nonsyphilitic cases, found in 85 per cent. a bilateral inguinal enlargement. Moreover, it may be impossible to distinguish syphilitic enlargement of the inguinal nodes

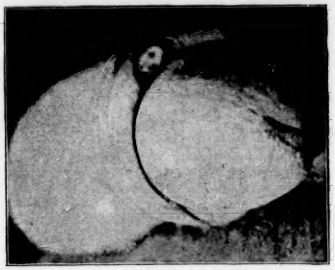

Fig. 6.—Ulcerated chancre foreskin (early): duration, three days; untreated locally; dark field ++; Wassermann reaction, alcoholic antigen —; cholesterized antigen +++. The floor was ulcerative and dirty gray; the surrounding area of inflammation is shown in the illustration as a dark area; there was no induration; a localized area of edema surrounded the sore.

from an enlargement caused by any other venereal diseases. However, the presence of enlarged inguinal lymph nodes, followed by a general enlargement of the lymphatic nodes, is characteristic of syphilis. In about 5 per cent. of cases of primary syphilis there is no palpable change in the lymphatic nodes. In the presence of secondary pyogenic infection, however, it is common to find a suppurative adenitis.

A nonsyphilitic genital lesion may be differentiated from a chancre. These sores start as a superficial ulcer and later become deep, or they may start as a pustule which breaks down and forms an ulcer. Such ulcers have gnawed, undermined edges. The floor is of a dirty gray, pitted and worm eaten in appearance. An area of inflammation surrounds the sore. Later the contour becomes irregular because, while one part of the ulcer tends to heal, the other invades the normal tissue. These nonsyphilitic sores are painful, bleed easily, and do not secrete serum so plentifully as do chancres.

The earliest clinical appearance of a genital chancre is a minute, sharply rounded, hyperemic area, which after a very short period becomes a superficial abrasion. This type of chancre is called the abrasive chancre (Fig. 2). It is usually seen only early, and is the first appreciable evidence of syphilitic infection. On account of the insignificant appearance of the sore it is most frequently undiagnosed. The surface is round, about 0.5 cm. or less in diameter, sharply marginated, smooth and polished. It appears exactly like an abrasion or excoriation because of shedding of the uppermost epithelial layer. The abrasive area enlarges and these changes take place: A secondary infection of its surface changes the sore into an ulcerative chancre (Figs. 6 and 7) or, if induration is present or subsequently develops, into an ulcerative, indurative chancre (Fig. 10). The ulcerative, nonindurative, orbicular chancre[3] (Fig. 8) is another type of ulcerative chancre. It is an atypical and rare chancre, occurring as a circular ulceration about the size of a penny; the floor is bright red with raised edges. Induration is notably absent. The characteristic beef-red floor suggested to Taylor the name "beefsteak" chancre. Infection of the surface of the chancre without ulceration is called infected abrasive (Fig. 5). If induration raises the sore above the level of the surrounding tissue, the surface remaining open, we have an abrasive papular chancre (Fig. 3). If the surface becomes closed, however, the sore is simply called a papular chancre. If induration appears below the level of the surrounding parts, an abrasive indurative chancre is formed (Fig. 9). A sore in which the induration spreads beneath and beyond its surface forming a thin disklike mass is called a parchment chancre.[4]

LOCATION OF GENITAL CHANCRES

The form of a genital chancre depends considerably on its location. The cellular reaction to the spirochete is modified by the tissue and the blood supply at the site of infection. The form of a chancre is also modified by extraneous factors, such as friction and infection. These in turn depend much on the location of the sore.

CHANCRE OF THE SHAFT

The majority of all sores seen on the shaft of the penis are syphilitic. The most commonly seen chancres in this location are abrasive, abrasive papular, and abrasive indurative types. In addition, the ulcerative, nonindurative, orbicular chancre is usually seen only in this region. Chancres of the shaft, with the exception of the last type, become indurated early. Infection at this location is the exception.

CHANCRES OF THE PREPUCE

The roll of the prepuce just behind the corona, as is shown in Table 3, is the most frequent site not only for chancres but also for nonsyphilitic sores. There is no type of chancre characteristic for this location. The frequently unclean state of the prepuce, the absence of air, and the presence of moisture predispose to an early infection. Hence a clinical diagnosis may be difficult (Figs. 6 and 7). Induration is more likely to be present in chancres of the prepuce than in any other region of the penis. Induration in this location is more easily estimated, as retraction of the prepuce produces a very characteristic appearance—the whole lesion flicks over like a plate turning on its edge. As the result of multiple chancres, induration may involve

Fig. 7.—Ulcerative chancre foreskin (late): duration, fourteen days; untreated locally; dark field after many examinations was +; Wassermann reaction +++. This sore was probably the result of pyogenic infection of an abrasive chancre; the floor was suppurative; at the center of the sore the edges were raised; slight induration was present.

2. Friedlander, D. J.: J. Cut. Dis. **30**: 14 (Jan.) 1912.

3. Pictures of this unusual type of chancre are shown in Powers and Murphy's System of Syphilis, Taylor's Genito-Urinary and Venereal Diseases, and McDonagh's Biology and Treatment of Venereal Diseases. In the latter volume an excellent description of this type of chancre is given.

4. The so-called hunterian chancre refers not to any particular type of chancre but to the character of induration. Such induration is commonly seen in a chancre of the sulcus (Fig. 10).

the entire circumference of the penis behind the corona, producing what is known as "collar" induration. Here, as elsewhere, the only evidence of a chancre may be a cartilage-like mass under the intact skin—the papular chancre.

CHANCRES OF THE SULCUS

There are two types of ulcerative, indurative chancres most frequently seen in this location. In one type there is a small area of ulceration on the floor of the sulcus surrounded by a rounded area of induration which extends farther and is more marked on the preputial side than on that of the glans. This induration extends only slightly beyond the corona. This crescentic form of induration produces the characteristic "swallow's nest" appearance. In the other type the induration and the ulceration are often so extensive as to involve the entire side of the sulcus (Fig. 10). The sore is inflammatory and painful. The surface may be covered with a "cream green" membrane, and there is usually present a foul-smelling secretion. Some induration is almost always present in chancres of the sulcus. This induration is usually of a cartilaginous nature and is whitish, because of the fibrous tissue which constricts the blood vessels. When the prepuce is retracted, the sore springs suddenly into view in a typical manner.

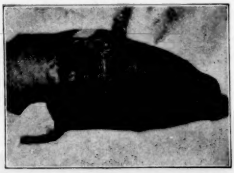

Fig. 8.—Ulcerative nonindurated orbicular chancre, treated locally with tincture of iodin; secondary eruption on body; dark field —; Wassermann reaction ++++. The floor was noninfected, beef red in color; the edges were raised; induration was absent.

CHANCRE OF THE GLANS

Two types of chancres are seen on the glans. One type is an abrasive chancre seen as a perfectly circular and sharply demarcated erosion (Fig. 9). The edges are flat and flush with the surrounding parts. Occasionally, however, the surface may be slightly below the level of the surrounding tissue. Early induration is absent; later, however, it is slight but is never marked. The second type of chancre is the abrasive papular, and is seen on the anterior part of the glans surrounding the meatus. This type is sharply circumscribed and slightly raised above the surrounding tissue. It appears as though the sore were stuck on the glans and then flattened out. The surface is usually crustaceous, and when the crust is removed the floor is bright red. This sore is more indurated than the first type.

CHANCRE OF THE FRENUM

The chancre may involve the base of the frenum or the entire frenum. Chancres of the base, when seen early, appear as abrasive, circular areas. The surface is either flush with the surrounding tissues or slightly depressed. Slight but never marked induration appears late in the course of the sore, and it is then seen as a small node about the size of a split pea. A chancre of the entire frenum is usually seen as a linear ulceration (Fig. 11) with a suppurative grayish-yellow floor, the edges of which are raised. Induration, if present, is only slight. Chancres of the frenum are frequently infected, and hence they appear as ulcerations. They therefore simulate nonsyphilitic sores.

INTRA-URETHRAL CHANCRE

In the majority of all cases of intra-urethral chancres a varying amount of the sore can be seen as a portion of it spreads over the edge of the meatus. This portion is a dull red, sharply circumscribed erosion, which, when infected, has a dirty gray surface. Induration is always present and can be easily felt by pressing the glans from above downward between the forefinger and thumb. When the chancre is wholly intra-urethral, the only objective evidence is induration. Slightly painful urination and a blood-tinged, serous discharge are accompanying symptoms of these chancres which not uncommonly lead to a wrong diagnosis of gonorrhea.

MIXED INFECTIONS (CHANCROID AND CHANCRE)

Simultaneously with the inoculation of syphilis, infection with a chancroid or pyogenic organism may occur. During the incubation period of the chancre, the accompanying nonsyphilitic sore remains unchanged. At the end of this period the clinical characteristics of the chancre appear. Induration raises the floor of the sore, and hence the raised and undermined edge disappears as the surface becomes flush with the surrounding parts. The dark-field examination may be positive. The Wassermann reaction is not positive at this time, but becomes so later. It is by reason of the possibility of mixed infection that every genital sore should be considered syphilitic until proved otherwise. Erosive and gangrenous balanitis is another infection which may occur simultaneously with a chancre. This infection is supposed to be caused by a symbiosis of a vibrio with *Spirochaeta balanitidis*. The lesion is seen in two forms, mild and severe. In the mild form, balanitis erosiva circinata, the lesion appears as whitish patches involving the sulcus, the roll of the prepuce or the glans. Phimosis rapidly develops as an essential factor, since these organisms are anaerobic. In the severe form the parts involved become ulcerative and gangrenous with subsequent sloughing. In the mucopurulent discharge from beneath the foreskin, the alleged causative agent, *Spirochaeta balanitidis*, can readily be demonstrated, although *Spirochaeta pallida* is also seen if a mixed infection is present. The two organisms are easily differentiated, as *Spirochaeta balanitidis* is coarser and moves with considerably more rapidity than *Spirochaeta pallida*. In stained preparations both the vibrio and the spirochete are seen.

Fig. 9.—Abrasive orbicular chancre, glans: duration, three days; no previous local treatment; dark field +++; Wassermann reaction —. This sore was the size of a split pea, circular in outline; the floor was uninfected and red; the edges were a little below the level of the surrounding parts.

PHIMOSIS AS A COMPLICATION OF CHANCRE

This complication most commonly develops subsequent to chancres in the roll of the prepuce and in the sulcus. In the 121 chancres, phimosis was present in sixteen, or 13.2 per cent., whereas, in seventy-five cases of chancres occurring in sulcus and prepuce in this series, it was present in 61.3 per cent. As already mentioned, uncleanliness, the absence of air, and the presence of moisture predispose to a pyogenic infection and balanitis, which subsequently leads to a phi-

mosis. An additional and sometimes the only etiologic factor is the widespread indurative infiltration of the lymphatics. A diagnosis in the presence of this complication may be made by inspection and palpation alone. The characteristic syphilitic edema of the entire foreskin is present, and in addition it is more swollen on the side on which the sore is present (Fig. 12). A localized indurative mass, or the "collar" form of induration, is palpable beneath the foreskin.

Fig. 10.—Ulcerative, indurative chancre, sulcus: duration, one month; treated locally with silver nitrate; dark field +; Wassermann reaction ++++. Note the extensive area of infection and ulceration; the floor was covered with a foul-smelling, yellowish-green secretion; induration was present beneath the entire area; in addition, there was a raised and crescentic form of induration involving the right side of the prepuce just beyond the sulcus.

A mucopurulent discharge is almost always present, and on this account the diagnosis of gonorrhea is frequently made. Syphilis is not suspected until the appearance of the secondary eruption. It is therefore important in cases of phimosis, venereal in origin, that the presence of a chancre beneath the foreskin be excluded. Occasionally in some of these cases the foreskin may be sufficiently retracted to expose partly the genital lesion for a dark-field examination. If this is not possible, the secretion from beneath the foreskin should be examined for the presence of spirochetes. If this examination is negative, the serum obtained from puncturing the inguinal lymph nodes should be examined.

COMMENT

In the proper treatment of any infectious disease with a specific drug or serum, the earlier the treatment is administered the greater is the prospect of cure. This is undoubtedly true in the treatment of one type of pneumonia with its specific serum, in malaria with the use of quinin, and in other diseases in which specific therapeusis is indicated. The proper treatment of syphilis is no exception to this fundamental principle. On this vital principle may depend the fate of the syphilitic. If this opportunity is lost his fate may "hang upon a thread," depending on the localization of the spirochetes in his body. It has been appropriately said that the syphilitic lives with the sword of Damocles suspended above his head. The necessity of early diagnosis and treatment should be deeply and indelibly engraved on the mind of every physician who has to deal with genital lesions. It is incumbent on the physician to remember that a short interval may exist between an apparently innocent genital lesion and a latent state of paresis. Every syphilitic in the early stage of his infection is a potential tabetic or paretic.

The obsolete separation of syphilis into three stages is possibly unjustified from a pathologic view. Our modern conception of the disease justifies the belief that there is no demarcation between the stages of the disease, and that infection becomes generalized within a few hours after inoculation, becoming more and more intense until the secondary eruption appears.

In the light of our modern knowledge of syphilis and the means at our disposal for early diagnosis and the valuable therapeutic agents at hand for treatment, it seems inconsistent and criminal that secondary eruptions of syphilis are so frequently seen. Yet, in this series of genital chancres the average duration of the chancre was 34.4 days, and a secondary eruption was present in 24.7 per cent. The time is at hand when a secondary eruption of syphilis should be a dermatologic rarity, and the occasion of such a diagnosis should imply carelessness on the part of the physician first seeing the patient for his failure to diagnose the chancre. The only excuse is to be found in the fact that patients with secondary syphilis commonly give the history of having had very recently a "chancroid" which was "burnt" with a silver nitrate stick before an opportunity was given to the physician for correct diagnosis. The question may therefore be appropriately asked, "Who first sees and treats the majority of patients with primary syphilis?" The answer usually is, "quacks," the corner druggist, and the physician who as a routine treats all genital lesions with silver nitrate, and who either entirely neglects the valuable means at hand to diagnose the syphilitic lesion, or is ignorant of these methods.

Local treatment of a chancre with a spirocheticidal drug interferes temporarily or permanently with finding the spirochetes by dark-field examination; hence such treatment prevents the early diagnosis of a chancre and consequently the institution of treatment. The common practice of treating genital sores locally with silver nitrate or other equally powerful spirocheticidal drug before they are properly diagnosed should be discouraged. A routine dark-field examination of every genital sore as a means to an early diagnosis should be the rule rather than the exception.

We cannot hope to make any considerable progress in the prevention of syphilis and the consequences of syphilis until two movements are carried out: first, the education of the public regarding the infection so that the individual with a genital lesion will go to a reputable physician, and second, the education of the medical profession concerning the available means to an early diagnosis of syphilis. As long as the use of the dark-field apparatus and the spinal puncture needle are ignored, just so long will syphilis and its manifold manifestations remain a scourge to humanity.

Fig. 11.—Ulcerative chancre of the frenum: duration, from fifteen to twenty days; previously treated with silver nitrate; dark field +++; Wassermann reaction +. The part of the sore involving the foreskin was clinically a chancre; the part involving the glans, however, presented the picture of a nonsyphilitic sore, except that its surface was freely secretive; induration was absent; note the edematous foreskin.

SUMMARY

To prevent the spread of syphilis and to insure a cure, it is imperative that the diagnosis be made at the earliest possible moment.

The average duration of the genital chancre in this series of 115 cases was 34.4 days. A secondary erup-

tion of syphilis was present in 24.7 per cent. Local treatment had been applied to the chancre in 66 per cent.

The means at our disposal for the early diagnosis of syphilis are the dark-field apparatus, the Wassermann reaction, and clinical evidence.

A positive dark-field examination was obtained in 57.1 per cent. of this series. The shorter the period from the appearance of the chancre, the more likely it is that the dark-field examination will be positive. The converse is true with the Wassermann reaction. Therefore, the dark-field apparatus is not only the preferable laboratory test, but it is also more successful than the Wassermann reaction in the diagnosis of early syphilis.

Fig. 12.—Concealed chancre, sulcus, phimosis: duration, from ten to fourteen days; treated locally; dark field not possible; Wassermann reaction —. The foreskin was edematous, markedly inflamed and adherent; there was a mucopurulent discharge, shown as a white streak in the illustration; a hard mass was palpable in the right sulcus, and visible as a raised portion (left side of illustration); on account of the urgency of the condition, arsphenamin was promptly given; after the acute condition subsided, the foreskin was retracted, and the indurated remains of a chancre were seen in the floor of the right sulcus.

The too common practice of treating genital chancres with a spirocheticidal drug before they are properly diagnosed may prevent or greatly delay the obtaining of a positive dark-field examination.

A positive Wassermann reaction was obtained in 74.1 per cent. of this series. This reaction in late primary syphilis is the most successful laboratory method for diagnosis.

Both laboratory tests were negative in 8.6 per cent. Therefore, by the use of both tests, 91.4 per cent. of the chancres in this series were diagnosed by laboratory methods alone. However, by the use of these tests alone, delay may be experienced before the spirochetes are found in the secretion from the chancre, or before the Wassermann reaction, if negative, becomes positive, or before the report of this test is obtained. Treatment is therefore delayed, and delay at this time may be fatal and may mean an involvement of the nervous system. Moreover, if a chancre is seen in the negative stage of a Wassermann reaction, and if the dark-field examination is negative, it is not ideal to await the appearance of a positive Wassermann reaction for diagnosis.

A definite clinical diagnosis of a genital chancre can often be made. If a genital sore is clinically a chancre, and if the dark-field examination and the Wassermann reaction are both negative, it is perhaps better to start intensive treatment rather than await the appearance of a positive Wassermann reaction.

Criminal Tendencies of the Defective.—We are able to predict that with the exception of the lightest grade cases of dementia praecox and the higher grades of the feebleminded, who make up the occasional criminal, hypermorons, that the others are all marked for slaughter; that they cannot adjust themselves to a normal environment.—Hickson.

A GROUP OF INTERESTING SYNDROMES RESULTING FROM MULTIPLE EMBOLI

OBSERVATIONS IN A CASE OF CHRONIC BACTERIAL ENDOCARDITIS

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The case that forms the basis of this paper is of importance, first, because of the polymorphism of symptomatology of a relatively common disease, endocarditis, and secondly, because the old clinical aphorism whereby one attempts to group most, if not all, of the symptoms of a given case under a common heading, is reemphasized.

REPORT OF CASE

History.—A white man, aged 42, whose family history was significant only in that his mother died of heart disease, had smallpox twenty-six years before he came to my attention. Six years after having smallpox he suffered from an undetermined disease, which, so far as he can remember, consisted of fever and cough. He apparently recovered from this and was well up to one year before I saw him, when he had an attack of what he terms the grip, which began with severe dyspnea (almost to the point of suffocation), necessitating the summoning of an ambulance and the administration of a hypodermic injection to relieve him. He then coughed and had fever, and the next night hemoptysis.

After three weeks there was an acute inflammatory condition of the right foot. Then there came a sudden pain in the right elbow, followed by an appreciable smallness of the pulse on that side. To put it in the patient's own words, "he felt that the throbbing of the arteries, which was present in both arms, had suddenly stopped on the right side."

Fig. 1.—Edema and swelling of left hand.

Later he had a sudden attack of severe pain in the left knee that radiated up the thigh and down the leg, but there was no accompanying inflammatory condition of the knee joint proper. This condition gradually improved and he was fairly comfortable for a few months. But his well-being was not to be lasting, for he suddenly lost power in the left arm and left leg, and the angle of the mouth drooped on the right side. The latter fact was elicited by having the patient imitate the condition of facial contortion that existed at the time. Consciousness, however, was retained throughout the hemiplegic

attack. In a few days he recovered power in his leg, but the arm was still weak. Two months later he noticed swelling of the hand and fingers of the paralyzed arm which, after disappearing and recurring a few times, finally remained. Up to the present time no other change had occurred. There was also pain in the shoulder and elbow of the paralyzed arm that dated back to the hemiplegic attack. The sharp pains that occurred in the shoulder and elbow joints of the paralyzed arm, I regard as being due to the arthritis that often accompanies a hemiplegic extremity and are therefore of different origin from some of the other painful conditions of the extremities that accompanied this case.

Examination.—The patient was poorly nourished, was dyspneic, and the lips, nose and ears showed cyanosis. He held his left arm slightly flexed at the elbow, guarding it carefully, as if to ward off possible harm. Handling the arm in any but a gentle manner made the patient wince with pain, localized principally in the shoulder joint.

His face showed the presence of old smallpox depressions. The gums and teeth were in poor condition, and the tonsils were ragged. In the neck the carotid pulsations were marked.

The lungs were negative except for a few moist râles, generally distributed over both lungs.

The apex beat of the heart was heaving, of the so-called choc-en-dome variety, and was situated in the fifth and sixth interspaces about three-quarters inch outside the mid-clavicular line. At the aortic orifice a systolic murmur was very prominent and was transmitted to the vessels of the neck, and at Erb's point (third interspace to the left of the sternum) a soft diastolic murmur was also heard. At the apex there was a loud systolic murmur, transmitted to the axilla and the back and preceded by a presystolic rumble.

At a later date, and after digitalis therapy had been employed, the diastolic murmur at the aortic orifice disappeared, proving the latter to be relative and due to the widening of the aortic ring, because of the loss of myocardial tone. The presystolic murmur at the apex also disappeared.

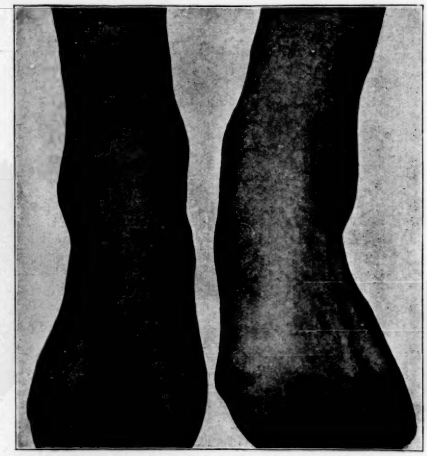

Fig. 2.—Periarticular swelling around left ankle.

The blood pressure on the right side was: systolic, 123; diastolic, 46; on the left side: systolic, 135; diastolic, 43.

The left border of the heart was in the axillary line; the right border was about one-half inch to the right of the sternum. The base of the heart was widened, as outlined by percussion. Roentgenoscopy revealed the left border of the heart to be 12 cm. to the left of the midline (the upper limit for normal is 9 cm.); the right border was 5 cm. from the midline (the upper limit for normal is 4.4 cm.). The aorta was widened. Fluoroscopy in all directions, including first and second diagonal positions, ruled out the possibility of an aneurysm.

The abdomen was found to be negative, as were also the tendon reflexes.

The extremities were interesting in the following respects: The left arm was paretic. There was, however, a slight contraction of the biceps, so that the elbow joint was held in a position of flexion. The left hand was markedly edematous, and the fingers were definitely clubbed (Fig. 1). On the left foot there was some periarticular swelling about the ankle, and cutaneous sensibility tests showed the left arm and hand to be hyperalgesic as well as hyperesthetic. The deltoid and the biceps muscles of the left arm were atrophied because of disuse, resulting from the paralysis and also the painful condition of the shoulder joint.

The muscular reactions of the biceps and the anterior and posterior bellies of the deltoid were as follows: On the left side the faradic response was greater than on the right side; the galvanic anodal contraction, however, was greater than the cathodal on the left side.

The galvanic reactions on the diseased side corresponded, therefore, to those occurring in peripheral nerve disease; but since the faradic response did not indicate such a condition, we may say that the nerve or muscle degeneration present was quite limited in its extent.

The radial pulses were unequal, the one on the right side being much smaller than the one on the left. Arterial tracings confirmed this inequality of pulse beats. They showed, further, that the right radial pulse was of the tardus variety with its gradual rise and fall. Were this the form of the pulse tracings in all the arteries, one would be justified, on that ground alone, almost positively to diagnose a condition of stenosis of the aorta or its orifice. But as this pulsus tardus was confined to the right radial artery, one is justified in diagnosing a stenosis or obstruction to the right radial artery.

The left radial artery gave an anacrotic pulse tracing in which the anacrotic limb, instead of falling, was sustained almost to the time of the dicrotic notch. This was due to the condition of high peripheral resistance, which prevented the rapid emptying of the given segment of the vessel, thus causing the pressure to be sustained, rather than to fall shortly after the rise.

The left brachial artery gave a "bisferiens pulse," with the characteristic notching on the plateau, a condition simply indicating increased peripheral resistance, such as might occur in a sclerotic condition of the blood vessels.

The right brachial tracing showed a smaller pulse than on the opposite side with a more gradual fall of the catacrotic limb.

Roentgenograms of both hands showed a rarefaction of the phalangeal bones near the interphalangeal joints, and also of the carpal and metacarpal bones.

The urinary findings were irrelevant; the blood culture was negative. The Wassermann test was negative and remained so, even after provocative mercurial administration.

COMMENT

A man with chronic valvular disease at the mitral and aortic orifices probably rheumatic in origin, or perhaps gaining entrance through diseased tonsils, was in fairly good condition until last year, when he had an acute attack of what he called the grip and which consisted of severe dyspnea and cyanosis, accompanied by cough, fever and expectoration of blood. This in all probability was a pulmonary infarct, produced by an embolus consisting of a vegetation from a diseased heart valve, or by the breaking off of a thrombus, which perhaps lodged in one of the chambers of the heart.

He then had a sudden pain in the right elbow accompanied by a subjectively perceptible smallness of the

pulse on that side, which the radial tracing proved to be a stenosis of the radial artery due to an embolus.

The pains in the right foot and left knee, being unaccompanied by swelling of the joints proper, may be interpreted as embolic, and were probably caused by dorsalis pedis and popliteal artery obstruction, respectively.

The next condition brought to our attention is a hemiplegia affecting the left arm and left leg and the right side of the face. This constitutes the so-called Millard-Gubler syndrome of crossed facial hemiplegia. Since it occurred suddenly and without unconsciousness, we may safely diagnose an embolus as the cause of the syndrome. The seat of disease in this condition is the pons, on the right side, that is, corresponding to the facial paralysis. The artery affected was probably one of the right branches of the basilar artery. We have still to explain the edema of the left hand, the clubbed fingers on that side and the rarefaction of the bones of the left hand producing a picture of osteoporosis. I think that these may be grouped under the heading of trophic disturbances, due to a hemiplegia, and those due to pontile lesions, according to Purves Stuart,[1] are not infrequently accompanied by severe vasomotor disturbances. Parenthetically, I would say that the trophic changes in bone may be even severe enough to cause spontaneous fractures in cases of hemiplegia.

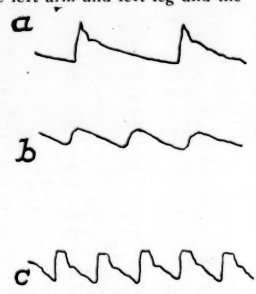

Fig. 3.—Pulse tracings: *a*, normal; *b*, right radial, pulsus tardus; *c*, left radial, anacrotic pulse.

Although the blood culture was negative, we regard this case as one of bacterial endocarditis in the bacteria-free stage. The organism is most likely of the

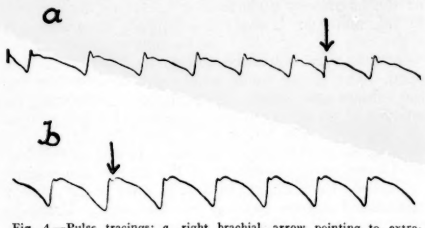

Fig. 4.—Pulse tracings: *a*, right brachial, arrow pointing to extrasystole (premature contraction); *b*, left brachial, "bisferiens pulse," arrow pointing to notch.

Streptococcus viridans type. This brings our case in the class described by Schottmüller[2] as "endocarditis lenta" and by Libman[3] as "subacute infective endocarditis."

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1. Stuart, Purves: Diagnosis of Nervous Diseases, 1916.
2. Schottmüller: München. med. Wchnschr. **57**: 880, 1910.
3. Libman: Am. J. M. Sc. **140**: 516, 1910.

Keeping Fit.—You can't go far if you don't keep fit.—*Bulletin*, Kansas State Board of Health.

HOOKWORM INFECTION AMONG TROOPS

TREATMENT WITH OIL OF CHENOPODIUM *

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Darling, Barber and Hacker[1] recently gave the results of their extensive study of the treatment of hookworm infection carried on in the Far East. The present investigation was largely patterned after their methods, but with two main objects in view: first, to get some idea of the severity of hookworm infection among Southern troops, and second, to check up the efficiency of the treatment used in this hospital. With the exception of thirteen negroes in Table 1, who came from their organizations, all the subjects used were chosen at random from the convalescents in the wards without reference to the degree of infection, although all were known to have positive stools. They were practically all from the Carolinas and Florida. A few had received treatment at their homes, but it does not seem to have been very effective, as one patient with 1,263 worms had received one treatment two months previously, one with 559 worms had received five, and one with 313 worms had received six.

The work was first undertaken in the hospital wards, but there was so much chance for error and the data were so incomplete that these results have largely been discarded, and none of them included in Tables 1, 2 and 3. A special building was then set aside for the work in which the patients lived and where all work was carried out. The object and methods of the investigation were explained to the patients, and they assisted greatly in the work. They were cautioned to avoid all fruits and fibrous vegetables while under treatment. Each patient had his own commode under his bed, with his name on it, and the stools were examined for forty-eight hours. The method of washing stools and removing worms was essentially that described by Darling, Barber and Hacker. The contents of a container were rinsed into a copper sieve (50 mesh) and then washed by a jet of water from a rubber tube attached to the tap. The residue containing the worms was rinsed into flat glass dishes and examined against suitable black and white backgrounds. Some of the patients became quite expert in picking out the worms, and there was a friendly rivalry as to who should have the most.

METHODS OF TREATMENT

According to the routine treatment used at this hospital, a light supper is ordered the night before and a full dose of magnesium sulphate is given about 8 p. m. No breakfast is taken in the morning, and 1.8 c.c. of oil of chenopodium is given in six gelatin capsules (supplied by a pharmaceutical house), two every hour for three doses. Two hours after the last capsules, another full dose of magnesium sulphate is given. This method was followed in the first series and the results are tabulated in Table 1. Table 2 shows a similar group of cases which were treated in the same way with the same oil expressed from the proprietary capsules. The oil was collected in a graduate and measured in a pipet, and exactly 0.3 c.c. put into hard gelatin

* From the laboratory of the base hospital, Camp Jackson, Marshall A. Barber, Major, S. C., U. S. Army, chief of laboratory.

1. Darling, S. T.; Barber, M. A., and Hacker, H. P.: The Treatment of Hookworm Infection, J. A. M. A. **70**: 499 (Feb. 23) 1918.

capsules, which are very soluble in water. In every case, whatever the laboratory findings may have been, each patient received at the end of four days a second treatment with freshly expressed oil, and this was repeated at similar intervals until it was evident that all worms had been removed.

EFFICIENCY OF SOFT CAPSULES

In determining the efficiency of any method of treatment, the number of cures alone does not give a fair estimate, since the drug used may leave 2 or 3 per cent. of the worms and still be highly efficient, but the case does not count as a cure. By figuring the total percentage of worms removed from a group of patients, we obtained a much better index, but this has one objection—that one or two large carriers may dominate the result, while the man with a very few worms hardly influences it at all. If the percentages destroyed by one treatment in each individual of a group of patients are averaged, we again get a fairly good index; but here the man with one worm counts the same as the one with a thousand. Therefore it was decided to use both of the latter methods and average the results, obtaining a value which is spoken of as the efficiency index. The balance is similar to that of our Congress, on one side the representation based on population, and on the other, each state counting equally.

TABLE 1.—RESULTS OF ONE TREATMENT WITH OIL OF CHENOPODIUM

1.8 c.c. in Soft Gelatin Proprietary Capsules

Case Number	Color	Hemoglobin	Total No. of Worms Found	No. Removed by First Treatment	Percentage Removed by One Treatment
1	C	..	177	175	98.9
2	C	..	27	7	25.9
3	C	..	18	18	100.0
4	C	..	3	3	100.0
5	C	..	27	16	59.3
6	C	..	6	6	100.0
7	C	..	17	17	100.0
8	C	..	1	1	100.0
9	C	..	11	11	100.0
10	C	..	59	59	100.0
11	C	..	81	81	100.0
12	C	..	11	11	100.0
13	C	..	13	13	100.0
14	W	80	360	346	93.8
15	W	85	66	43	65.1
16	W	85	21	21	100.0
17	W	80	18	9	50.0
18	W	80	28	18	64.3
19	W	90	57	54	94.7
20	W	78	15	11	73.3
21	W	90	99	12	12.1
22	W	85	131	131	100.0
23	W	85	16	16	100.0
24	W	85	8	7	87.5
25	W	..	12	4	33.3
26	W	90	245	239	97.5
27	W	80	6	0	0.0
28	W	..	288	119	41.3
29	W	85	115	102	88.7
30	W	90	38	38	100.0
31	W	85	10	8	80.0
32	W	95	71	56	78.9
33	W	80	32	27	84.4
34	W	75	313	247	78.6
35	W	60	1,704	495	29.0
Total			4,113	2,421	2,736.6
Average					78.18

Average of percentages	78.18
Percentage of grand total of worms removed by one treatment	58.86
Average or efficiency index	68.5

Table 1 gives the results obtained from the group treated in the routine manner with soft gelatin capsules. In this table it is seen that the first thirteen patients are negroes, and the results obtained were quite satisfactory. It is difficult to say whether this is due to their superior power of digestion or to the fact that the capsules used were a new lot and very fresh; at any rate, the later results among the white patients were far less satisfactory.

TABLE 2.—RESULTS OF ONE TREATMENT WITH OIL OF CHENOPODIUM

1.8 c.c. in Hard (Soluble) Capsules

Case Number	Color	Hemoglobin	Total No. of Worms Found	No. Removed by First Treatment	Percentage Removed by One Treatment
1	W	75	139	115	82.7
2	W	85	164	163	99.4
3	W	85	212	198	93.4
4	W	80	121	121	100.0
5	W	75	137	137	100.0
6	W	70	14	14	100.0
7	W	65	1,263	1,160	91.8
8	W	80	81	81	100.0
9	W	85	1	1	100.0
10	W	75	55	55	100.0
11	W	90	9	9	100.0
12	W	75	41	35	85.4
13	W	85	16	3	18.7
14	W	75	8	8	100.0
15	W	75	26	23	88.5
16	W	80	10	7	70.0
17	W	85	53	53	100.0
18	W	80	107	106	99.1
19	W	75	127	122	96.1
20	W	85	57	57	100.0
21	W	80	191	190	99.5
22	W	75	4	4	100.0
23	W	85	170	170	100.0
24	W	..	1	1	100.0
25	W	75	29	28	96.6
26	W	85	559	551	98.6
27	W	80	225	222	98.7
28	W	80	35	34	97.1
29	W	85	17	17	100.0
30	W	85	55	52	94.5
31	W	75	22	16	72.7
32	W	85	291	259	99.2
33	W	80	391	389	99.5
Total			4,001	4,402	3,082.1
Average					93.40

Average of percentages	93.40
Percentage of grand total of worms removed by one treatment	95.67
Average or efficiency index	94.5

It will be seen that the efficiency of the soft capsules is fixed at 68.5 and that of the fresh oil at 94.5. The question now arises as to what this marked difference is due—whether to a lack of dosage in the soft capsule or to its lack of solubility. The chemistry department of the laboratory undertook to ascertain the contents by this method: Twenty-five capsules were placed in a graduate in water and the volume read off. They were then removed, dried quickly by blotting, and cut open. The empty shells were then put in water and the volume again taken. The difference represents the amount of oil in twenty-five capsules. By this method the contents were found to be about 73 per cent. of that stated, but there may be errors in this calculation, as, for instance, absorption of the oil into the gelatin.

Darling, Barber and Hacker, in their report, give a number of figures bearing on this point. Using as efficiency index the group percentage of worms removed by one treatment, they found that the result of divided doses of oil of chenopodium was: 2 c.c., 95.18 per cent.; 1.5 c.c., 88.7 per cent.; 0.75 c.c., 80 per cent., and 30 minim soft gelatin capsules, 66.4 per cent. This shows distinctly that the insolubility is the main factor, as even 0.75 c.c. of the fresh oil was superior to the soft gelatin supposed to contain 2 c.c. It is interesting to note the similarity of these figures to those shown in the foregoing tables, with particular reference to the low efficiency of the soft gelatin capsules. Those used by Darling, Barber and Hacker were old. Those used here were obtained fresh, but from another manufacturer.

INSOLUBILITY OF CAPSULES AS CAUSE OF POOR RESULTS

Based on the idea that the insolubility was the main factor, a small group of patients was treated with three soft and three hard capsules. If the cause of the poor results of the routine treatment was the lack of dosage, the index would presumably be midway between that of Table 1 and Table 2. On the other hand, if the insolubility was the main factor, it was thought that perhaps the best results of all might be obtained. That is, the very soluble capsules would dissolve in the stomach and the oil be effectual on those worms high up in the intestinal tract, while the tougher, soft capsules would break up later on, and not losing any effectiveness by absorption, would care for the worms lower down. Table 3 shows this group of cases.

TABLE 3.—RESULTS OF ONE TREATMENT WITH OIL OF CHENOPODIUM

1.8 C.C.: 0.9 C.C. IN SOFT CAPSULES, 0.9 C.C. IN HARD (SOLUBLE) CAPSULES

Case Number	Hemoglobin	Total No. of Worms Found	No. Removed by First Treatment	Percentage Removed by One Treatment
1	...	52	50	96.2
2	65	919	892	97.1
3	75	130	130	100.0
4	80	81	76	93.8
5	75	40	40	100.0
6	85	10	9	90.0
7	75	364	361	99.2
8	80	45	45	100.0
9	85	26	25	96.2
10	80	169	153	90.5
Total		1,836	1,781	963.0
Average				96.3

Average of percentages	96.3
Percentage of grand total of worms removed by one treatment	97.0
Average or efficiency index	96.7

These results indicate that the factor is not insufficient dosage, and apparently is the lack of solubility. It should be stated, however, that this series of cases was an afterthought, and in the second treatments in some of the cases the stools could be examined for only twenty-four hours. In previous cases, however, experience has shown that the early stools are the important ones, those of the second day showing little or nothing. The efficiency index of this group is determined at 96.7, slightly better even than the hard capsules alone (94.5), and very markedly superior to the soft capsules at 68.5.

OTHER OBSERVATIONS

In most of these cases the hemoglobin was taken by a Tallqvist scale in order to ascertain whether it gave any indication of the amount of harm the infection was doing to the patients. Table 4 shows the result in eight groups of patients classified according to the number of worms. It is not practical to figure very closely on a factor which is as uncertain as the hemoglobin estimation, but as it stands, it appears there is no particular reduction in anything under 500 worms. In all other degrees of infection, most patients were found in the 80-89 group.

TABLE 4.—CORRELATION BETWEEN HEMOGLOBIN AND NUMBER OF WORMS

Number of Worms	Hemoglobin 60 to 69	70 to 79	80 to 89	90 to 100
1 to 25	0	4	9	2
26 to 50	0	4	4	0
51 to 100	0	1	5	3
101 to 200	0	4	8	0
201 to 350	0	1	5	1
351 to 500	0	1	2	0
501 to 1,000	1	0	1	0
Over 1,000	2	1	0	0

Table 5 shows the incidence of worms in the two races. Although the number of negroes is rather small, it seems evident that they are less heavily infected than white persons.

TABLE 5.—INCIDENCE OF WORMS BY GROUPS

Number of Worms	Number of White Cases	Number of Colored Cases
1 to 25	19	11
26 to 50	10	4
51 to 100	11	1
101 to 200	14	2
201 to 350	7	0
351 to 500	3	0
501 to 1,000	2	0
Over 1,000	3	0
Total	69	18

The average number of worms in sixty-nine white patients not previously treated in this hospital was 155.3. In eighteen negroes the average was 38.3. Three white patients had 1,010, 1,263 and 1,704 worms, respectively. The last patient was a thin, pale boy very evidently weakened by his disease, and before he was discharged his appearance and weight had improved remarkably.

In all cases except a few of the heaviest infection, the number of worms of each sex was determined to see which was the more resistant to the oil. Table 6 shows that there is no difference at all and that the larger female has no more resistance than the smaller male.

During this work, the patients were under close observation following the treatment, and it was possible to observe any symptoms of poisoning if they were present. In taking the fresh oil, the patients usually felt like lying down after the second or third dose, and, as a rule, they remained quiet during the day; but they were always ready to eat when they were allowed to, and felt better afterward. There was no vomiting except occasionally after the purge, and there were no other toxic symptoms except a feeling of weakness, of which all complained. This passed off in a few hours, and in the morning they were about as usual. The patients of the first series agreed that the hard capsules made them sicker than the soft, but there were no objective signs of toxic action of the drug.

TABLE 6.—INCIDENCE OF WORMS BY SEX

	Number	Per Cent.
Removed by first treatment:		
Females	3,702	56.5
Males	2,854	43.5
Total	6,556	
Removed by later treatments: i. e., survivors of first treatment:		
Females	380	56.0
Males	299	44.0
Total	679	

CONCLUSION

The results show that while in a considerable proportion of soldiers the infection is light, all grades are encountered and a few may be termed as severe. The negro appears to be less severely infected than the white race. The soft gelatin capsules stated to contain 5 minims are distinctly less efficient than a similar dose placed in soluble capsules.

VACCINATION OF TUBERCULOUS PATIENTS AGAINST SMALLPOX

RESULTS IN TWO HUNDRED CASES

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A review of the small amount of literature on the subject of vaccination against smallpox of tuberculous patients and personal consultation with several men of authority reveal the fact that it is apparently a matter of common agreement that vaccination should not be done unless it is extremely necessary for the safety and welfare of the patient.

The results obtained in compulsory vaccination of about 200 patients with pulmonary tuberculosis seem strongly to contradict this idea.

The reason for the compulsory vaccination was that a virulent case of smallpox broke out in the institution and the patient had been mingling with all the other patients for about ten days prior to the time of the eruption and the making of the diagnosis.

REPORT OF CASE

W. Mc., man, aged 34, white, admitted, Aug. 2, 1918, with the ordinary history of a tuberculous breakdown, was well nourished and was only 5 pounds underweight, weighing 170 pounds. He had no cough and very little expectoration, but what there was gave a positive reaction for tubercle bacilli. Chest examination revealed very little. The patient was classed as incipient (Turban Stage 1).

August 12—ten days after admission—the patient's temperature rose to 102.6. He complained of headache, general malaise, nausea, vomiting and constipation. Chest examination disclosed no cause for the rise of temperature. On the 16th his temperature dropped to subnormal and he developed an eruption. A diagnosis of smallpox was made, which was confirmed by the state dermatologist.

VACCINATION OF THE OTHER PATIENTS

As the patient had been mingling with the other patients and employees in the main dining hall and cottages, compulsory vaccination was decided on, and all patients, regardless of stage or activity, were vaccinated, August 17. The number vaccinated was 200, made up of seventy in the first stage, eighty-three in the second, and forty-seven in the third. The majority had some activity and some elevation of temperature. Among these patients there were forty who either had never been vaccinated before, or had been vaccinated with negative results.

Three weeks after vaccination all cases were closely observed, and it was found that there were about 50 per cent. positive vaccinations. Fifteen per cent. of the patients had sore arms and 8 per cent. were "on tray" for one or more meals. On the ninth day after vaccination, one patient developed a typical varioloid eruption about the neck and also had a positive vaccination on the arm. Several patients who had to be kept on tray had a rise in temperature which lasted for a day or two and was present at the time the redness, swelling and soreness of the arm were the greatest. There were no instances in which patients complained of any conditions pertaining to the chest that could in any way be traced to the vaccination. The majority of the patients were examined three or four weeks after the vaccination, and in no case were there any changes incompatible with the usual course of tuberculosis.

In reviewing the results obtained from this series of vaccinations, it would appear that when a case of smallpox breaks out among tuberculous patients and there is a possibility of a spread of the disease among the patients, compulsory vaccination is advisable.

The results obtained in far advanced cases could not be differentiated from the results obtained in the first and second stage cases, and it would seem, therefore, that these cases should not be exempted when considering vaccination. Although it would not be advisable to vaccinate all patients against smallpox when first admitted to an institution, yet it should be done at once when the necessity arises.

The smallpox patient made a normal recovery from his smallpox and was discharged from the institution within three months as an apparently arrested case of pulmonary tuberculosis. His sputum was negative for tubercle bacilli on discharge. No other cases of smallpox developed at the institution.

STREPTOCOCCUS PNEUMONIA

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At Fort Sam Houston, Texas, during the winter of 1917-1918, it was noted that the majority of pneumonia cases presented a clinical type not often seen in civil practice. The patients were highly septic; the pneumonia, for the most part, followed measles, and when not fatal, it often terminated in empyema. It was further observed that the usual type of lobar pneumonia was often complicated by relapses, which were attributed to delayed resolution. The frequency of what we shall call, for the present, septic pneumonia, and its occurrence as a complication of measles, led to an investigation as to the causative organism in this type of the disease, as well as in the complicated, so-called lobar pneumonia. It is well known that the hemolytic streptococcus is almost exclusively the causative organism of complications in scarlet fever cases; and since pneumonia is not an uncommon complication of this disease, we were led to map out a bacteriologic investigation of measles and pneumonia cases; this included the identification of this organism.

As previously reported, it was readily determined that a large percentage of measles patients harbored the hemolytic streptococcus in their throats on entering the hospital, and further, that this organism was found in practically all specimens of sputum from septic pneumonia patients, also in the pus from empema patients, and finally in the blood stream shortly before death.[1] Furthermore, this organism was found in the throat, sputum, empyema pus, and blood stream of many patients suffering from so-called lobar pneumonia.

It would seem that this organism is of sufficient importance to warrant a brief consideration of its epidemiology. Epidemiologic studies of the occurrence of

1. Cumming, J. G.; Spruit, C. B., and Lynch, Charles: The Pneumonias: Streptococcus and Pneumococcus Groups, J. A. M. A. 70: 1065 (April 13) 1918.

more or less extensive milk-borne epidemics of tonsillitis or septic sore throat in England, as well as in this country, chiefly in the vicinity of Boston, Chicago and Baltimore, make plain the epidemiology of hemolytic streptococcus infection. It is the opinion of Smith and Brown that the organism is of human origin, that it gains access to the cow's udder from infected milkers, and that milk is the chief, if not the only, disseminator of this disease on a large scale, in these milk-borne epidemics. Smillie reports its frequent occurrence in the throats of scarlet fever patients and in the blood stream in the fatal cases. It has been isolated from the blood stream of septicemia patients following trivial wounds, and is now believed to have been the chief cause of sepsis following childbirth.

In pursuance of our plan of investigation of throat swab cultures from measles patients, it was at first believed that we should determine the prevalence of type pneumococci as well as hemolytic streptococci. But owing to the early discovery that the hemolytic streptococcus was the predominant, if not the sole, cause of pneumonia following measles, we later limited our investigation to the identification of hemolytic streptococci.

HEMOLYTIC STREPTOCOCCUS CARRIERS

With the view of determining the percentage of hemolytic streptococcus carriers among measles patients on entrance to the hospital, throat swab cultures were taken in 452 cases. These fell into two groups, one showing Types I and II,[2] and the second showing Type III.[3] Of these, 294, or 64 per cent., showed Types I and II hemolysis, while 158, or 35 per cent., showed Type III hemolysis. Among the 294 patients showing Types I and II hemolytic organisms, thirty, or 10 per cent., developed these complications: otitis media, four; bronchopneumonia, five; tonsillitis, seven; scarlet fever, three; lobar pneumonia, two; acute bronchitis, seven; erysipelas, one; cellulitis, one.

In contrast to the foregoing group, which shows 10 per cent. of complications, we find that among 158 patients showing Type III hemolytic streptococci, sixty-five, or 41 per cent, developed complications. These were: bronchopneumonia, fifty-two; empyema, nineteen; tonsillitis, nine; otitis media, eight; arthritis, four; acute bronchitis, five; mumps, one; lobar pneumonia, one; cellulitis, six. These eighty-four complications occurred among the sixty-five patients harboring streptococci.

If only the pneumonia cases are considered in these two groups of findings, it will be noted that among those measles patients from whom organisms showing Types I and II hemolysis were isolated, only 2 per cent. developed pneumonia; while among those harboring Type III hemolytic streptococcus, 32 per cent. developed pneumonia. The incidence in percentages was sixteen times greater among streptococcus carriers.

Considering the total pneumonia cases in both groups of throat findings among measles patients, it is shown that of the 452 cases, 12 per cent. developed pneumonia, and over 94 per cent. of this 12 per cent. occurred among streptococcus carriers.

In this series of cases it has been established that 35 per cent. of the measles patients were hemolytic streptococcus carriers on entering the hospital, and that 33 per cent. of these developed streptococcus pneumonia; while among the 65 per cent. of patients who were noncarriers, only 6 per cent. developed this complication.

In contrast to the high percentage of hemolytic streptococcus carriers among measles patients, it is pointed out that among 168 swabs from average throats, there was found only 6 per cent. streptococcus carriers. This percentage corresponds to that obtained by Smillie in his investigation of hemolytic streptococci in Boston. It is a significant fact that there are six times more streptococcus carriers among measles patients than among average well persons.

It might seem that the streptococcus in the throat of a carrier prepares the way for measles virus infections, and that the latter infection, in turn, produces a condition—lowered resistance—that favors streptococcus pneumonia—an extension of this infection to the lung, the pleural and pericardial cavities, and the blood streams, joints, etc.; or it is possible that both infections occur simultaneously through the same avenue of transmission. In order to determine whether or not measles patients are streptococcus carriers prior to measles infection, it is suggested that at least 1,000 recruits at some camp be examined for this organism, dividing these into carriers and noncarriers, and that they be kept under observation for the occurrence of measles in the two groups. Are streptococcus carriers more susceptible to virus infections?

BACTERIOLOGIC FINDINGS IN ANTEMORTEM PLEURAL EXUDATES AND BLOOD OF PATIENTS WITH PNEUMONIA FOLLOWING MEASLES

Of ninety-two examinations of pleural exudates from patients in the pneumonia wards, organisms were found in seventy-four specimens. Of forty-six specimens from patients diagnosed as having lobar pneumonia, 61 per cent. proved to be pure hemolytic streptococcus, and 39 per cent pneumococcus. Of twenty-eight bronchopneumonia specimens, 86 per cent. were streptococci and 14 per cent. pneumococci. By consolidating these two groups we find that 72 per cent. were hemolytic streptococci and 28 per cent. pneumococci. From these figures it would appear that clinically there is either a considerable error in the differential diagnosis of the pneumonias, or that a large percentage of the lobar types are complicated by streptococcus infection.

From patients with pneumonia following measles, thirty-eight blood specimens were examined. Of these, twenty-nine were negative, while nine, or 24 per cent., were positive for hemolytic streptococci. With few exceptions these positive specimens were obtained within twenty-four hours before death, showing that the blood stream invasion with this causative organism was a late event. In the series of necropsies to be reported, 52 per cent. of heart's blood cultures were positive.

BACTERIOLOGIC FINDINGS AT NECROPSY

In thirty-four necropsies on nine lobar pneumonia and twenty-five bronchopneumonia patients, streptococci—Type III hemolysis—were isolated from twenty-one lung specimens, twenty-three pleural exudates, fourteen pericardial exudates, and sixteen heart's blood specimens.

In twenty-seven, or 80 per cent., of the specimens from serous exudates or heart's blood, the strepto-

2. Small area hemolysis representing pneumococcus and Streptococcus viridans.
3. Large area hemolysis representing Streptococcus hemolyticus colonies.

coccus was isolated from pure culture, and in four, or 12 per cent., of the specimens it was coexistent with the pneumococcus; furthermore, it was found in one or more of these specimens in thirty, or 88 per cent., of the necropsies, lobar pneumonia cases included.

The streptococcus was isolated from each of the twenty-five necropsies on bronchopneumonia patients. Of these, 75 per cent. were known to have followed measles.

Of the nine lobar pneumonia postmortem specimens from clinically diagnosed lobar pneumonia cases, in only four instances was the pneumococcus unaccompanied by the streptococcus. In two others only streptococci were found, and in the remaining three there were both pneumococci and streptococci.

In only one necropsy on a patient that had had pneumonia following measles was a type epidemic pneumococcus found, and this was coexistent with the hemolytic streptococcus; while in the nine lobar pneumonia cases, hemolytic streptococci were found, either in pure culture or coexistent with pneumococci, in five, or 55 per cent., of the necropsies.

It would appear that the hemolytic streptococcus was the immediate cause of death in thirty, or 88 per cent., of the thirty-four cases, lobar pneumonia cases included; and since this organism was found in fairly pure cultures in all lung specimens as well as in pure cultures, in either serous exudates or the heart's blood or both, in cases of pneumonia following measles, it may be concluded that the hemolytic streptococcus is the causative organism in this complication following measles, and moreover, that it was the immediate cause of death in a large percentage of so-called lobar pneumonia cases.

SWAB AND SPUTUM SPECIMENS

Since, in this series of necropsies, the hemolytic streptococcus was identified as the causative organism of bronchopneumonia following measles, a series of sputum specimens was examined in conjunction with throat swabs. Of the swabs, 76 per cent. were positive, as were also 87 per cent. of the sputum specimens. In 55 per cent. of the cases the swabs as well as the sputum specimens were positive; while either swab or sputum was positive in 100 per cent. of the cases. These findings show the importance of taking both swab and sputum specimens.

HEMOLYTIC STREPTOCOCCI IN REMOVED TONSILS

Of 142 removed tonsils, 82 per cent. showed hemolytic streptococci. The tonsil acts as a reservoir for the organism. On removal of the tonsil, the throat rapidly clears of this, the most common of all secondary invading organisms.

IDENTIFICATION AND CLASSIFICATION

On account of the unquestioned prevalence of streptococcus pneumonia, both as a complication of measles and as a coexistent or a terminal infection in lobar pneumonia, it was decided to examine for streptococci sputum specimens submitted to the pneumococcus division for type identification. A total of ninety-two specimens was examined, and forty-nine, or 53 per cent., of these showed Type III hemolytic streptococci. Of these ninety-two sputum specimens, pneumococci Types I, II or III were identified in only 9 per cent. of the cases. Owing to the prevalence of streptococcus infection as a secondary and fatal involvement in lobar pneumonia, as well as in the virus infections, there is need for the instruction of all laboratory workers in the use of the hemolytic plate in the diagnosis of pneumonia. The clinician should insist on a report of the presence or absence of streptococci, as well as of type pneumococci. The importance of these findings in the sputum is substantiated in nine so-called lobar pneumonia cases, in which, at necropsy, hemolytic streptococci were isolated from the heart's blood or serous cavities in 55 per cent. of the specimens.

We are led to believe from our investigations that a diagnosis of Type IV pneumococcus should be made guardedly; furthermore, since massive lobular pneumonia may be incorrectly diagnosed as lobar pneumonia, and as lobar pneumonia involvements may be associated with streptococcus infection, which at Fort Sam Houston gave a mortality of 82 per cent. during January and February, we believe that all specimens of sputum should be examined for hemolytic streptococci as well as for pneumococci. Since the pneumonias are of two main groups—pneumococcus and streptococcus—and as these may be coexistent, the isolation of the causative organism or organisms in pure culture is essential to group as well as to type identification.

The value of routine streptococcus identification will become of particular importance in the event of the successful production of antistreptococcus serum.

PREVALENCE OF HEMOLYTIC STREPTOCOCCI

		Positive for Hemolytic Streptococci,
	No.	Per Cent.
Swabs from measles cases	857	35
Swabs from lobar pneumonia	165	69
Sputum specimens from lobar pneumonia	92	41
Swabs from scarlet fever	192	87
Swabs from otitis media	201	74
Swabs from mumps	147	37
Swabs from tonsillitis cases	79	54
Cultures from removed tonsils	142	82
Nose swabs from carriers	69	55
Average percentage of streptococcus carriers among foregoing cases	...	59
Throat swabs from average healthy individuals	168	6
Total	2,135	

The clinical classification of the pneumonias is important, though less so than the classification from the bacteriologic point of view. From the findings here presented it would seem that the disease may be classified according to the causative organisms into two main groups, secondary streptococcus or pneumococcus pneumonia following virus infections and primary pneumococcus which may be followed by secondary streptococcus pneumonia.

We confirm the contention of Smith and Brown that the hemolytic streptococcus Type III hemolysis is a definite type, in that the colonies produced by us in 10 per cent. horse blood agar were uniform in character, and that 150 strains secured from necropsies, throat swabs, and sputum specimens gave the characteristic sugar reactions. Since the hemolytic streptococcus has proved to be such a common cause of death, in the accompanying tabulation we present in brief the percentages of prevalence of this organism in the 1,967 specimen examinations.

It is interesting to note that nose swabs were taken from sixty-nine known carriers, and that 55 per cent. of these proved positive for streptococci. This finding, in conjunction with our experiments showing that streptococci in droplets are forced into the air during the act of coughing, might lead one to believe that

droplets as well as indirect contact infection would be a serious problem in measles and scarlet fever wards. To gain some information on this point, the dust from seven wards was examined, with negative results. Although ward dust may be quite free from streptococci, yet our observations in the surgical wards would indicate that bed linen and garments soiled with streptococci may act as a transmitting agent in the case of wound infection. Among clean operative cases the wounds in twelve became infected with hemolytic streptococci. Throat swab examiners showed that all these patients were streptococcus carriers. Auto-infection, either through soiled linen as a medium or through the blood stream, would in these cases appear to be the only two avenues of infection; and of the two, the former would seem to be the more possible.

From the results of throat swab examinations of twenty-eight attendants in the streptococcus wards, it was found that 25 per cent. of these were hemolytic streptococcus carriers. If this finding alone is considered, one would conclude that streptococcus pneumonia may be called a hospital infection. But this is not so, because it was shown that 94 per cent. of all streptococcus pneumonia patients were streptococcus carriers on entrance to the hospital. In addition, it was found by the examination of convalescent measles patients that streptococcus infection rarely occurred in the hospital wards. Infection of ward attendants is naturally the result of prolonged exposure and close association, and from the results of our investigation it would seem that cross-infection among patients seldom occurs. In order to prevent the possibility of cross-infection in the wards, which we do not believe takes place to any great extent, patients harboring hemolytic streptococci should be isolated as soon as possible after admission.

In the large cantonment hospitals where a large number of patients are cared for, it is preferable to have three or more wards—one of these used exclusively for a detention ward, where regulations providing for the sheet method of separation, the individual face mask, and the frequent washing of hands of attendants are rigidly enforced; other wards may be designated as streptococcus and clean wards.

In the streptococcus wards, the usual methods of disinfection and the practice of scrupulous cleanliness of hands should be insisted on in order to protect attendants against infection. In our opinion, the sheet and individual mask method of protection is of value only in the detention ward, or when it is impossible on account of lack of laboratory facilities to classify the patients into carriers and noncarriers.

CONCLUSIONS

From the evidence here presented it will be seen that:

1. The hemolytic streptococcus was present in the throats of 35 per cent. of all measles patients on entrance to the hospital, and that 94 per cent. of measles patients who developed bronchopneumonia belonged to this group of carriers, while only 6 per cent. of noncarriers developed pneumonia complications.

2. This streptococcus was found in pure cultures at necropsy in the serous cavities and heart's blood of all measles-pneumonia patients, and in 55 per cent. of lobar pneumonia patients.

3. This streptococcus is the same as the beta streptococcus of Smith and Brown.

4. Type III hemolytic streptococci isolated from the serous cavities and heart's blood were always large zone hemolyzers.

5. The presence of hemolytic streptococcus in the throat and sputum of so-called lobar pneumonia patients and in the serous cavities and lungs at necropsy shows that in the classification and treatment of the pneumonias, the streptococcus must be as diligently sought for as the type pneumococci.

6. Laboratory men should acquire a technic for the recognition and isolation of the hemolytic streptococcus from throat swabs and sputums of measles and all pneumonia patients.

7. In practically all cases (94 per cent.), the hemolytic streptococcus is acquired *before* entrance to the hospital.

Prevention consists in: (*a*) the pasteurization of all milk supplies, thus eliminating the possibility of septic sore throat followed by the carrier state; (*b*) the removal of tonsils of those individuals who are identified as streptococcus carriers; (*c*) the control of measles epidemics by the early recognition and isolation of patients; (*d*) the segregation of streptococcus carriers in hospital wards; (*e*) scrupulous cleanliness of the hands of attendants and patients, and (*f*) the development of a reliable vaccine and serum treatment.

TWO NEW DIAGNOSTIC METHODS FOR PATIENTS WITH CARDIAC DISEASE

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1. TACHYCARDIA

In the recent articles on the subject of so-called soldiers' heart, latterly termed "neurocirculatory asthenia," it is noted that this syndrome is encountered in the civilian as well as in the soldier. This fact is borne out forcibly if one is on the alert during the entrance examinations of recruits. Since the beginning of the very large draft increments, every man entering the service has been examined for evidence of cardiovascular disease. This work, formerly done parenthetically by the tuberculosis board at Camp Funston, is now conducted by medical officers of the cardiovascular board, who have had a rare experience in examining many subjects and in the detection of suggestive signs of cardiovascular disorders. At an average, during a large draft, 1,500 men pass through their hands each day. Two medical officers, working in shifts of two hours each, are responsible for this work. From 5 to 7 per cent. of the total number (1,500) each day are referred to the cardiac room for suspected cardiovascular disease. This room is manned by two officers. Here the subjects have a searching examination, the results of which are recorded, if necessary.

The most difficult and trying task in the preliminary examinations is the proper decision in cases showing various grades of tachycardia. They represent an enormous number of cases. When one considers that at this receiving station, which represents a

highly organized and beautifully regulated machine, the men are admitted, bathed, examined (physically, morally and mentally), inoculated, put into soldier's clothes and assigned, all on the day of their arrival, it is little wonder that even the most stable nervous systems show evidences of psychic disturbance. However, after the observation, in the course of many previous examinations, of certain indefinable, as well as some well defined points, a large portion of these cases are disposed of with little effort. Although it is not a bit unusual to listen to hearts in this category beating between 120 and 180, still in cases of simple or neurotachycardia the accompanying dyspnea is not present. The patients frequently breathe irregularly both as to rate and depth. They are "fidgety" and have coarse, irregular tremors often confined to one hand or the other, stopping during conversation. No pinched expression is noted. There is frequently some hesitancy in speech. The individual is simply excited. Frequently during auscultation the heart gradually reduces its rate to nearly normal, and again accelerates, especially if the patient is allowed to talk or is told to breathe deeply. In nearly all such cases, the dorsal posture causes an early or delayed diminution of the pulse rate to 100 or lower. It becomes second nature to resort quickly to one or the other method of proof of nervous influence. There are, however, a large number of cases which are not amenable to these tests. A very reliable means at our hands for testing for simple tachycardia will presently be advanced.

With the cases of persistent tachycardia (of course, excluding toxic causes), the task becomes quite difficult. This holds true for the soldier as well as for the recruit. It is amazing to note with what rapidity the heart beats, in such cases, with no apparent discomfort on the part of the individual. During inactivity there is no disturbance of respiration. No simple means, as explained before, are of avail in reducing the cardiac rate. The patients are usually not excited. Their response to exercise is poor, prolonged dyspnea, increased tachycardia, returning in from three to five minutes to the original high rate, a somewhat anxious look and inordinate sweating being prominent symptoms. Questions, not leading in character, usually elicit one or more of the following facts: (1) poor sustaining powers in games, running or lifting, dating from some infection, such as rheumatism, grip, pertussis or measles; (2) various types of sensations in the region of the precordium at irregular times, described as a burning, actual pain, or a feeling of fulness or heaviness; (3) palpitation, or a consciousness of rapid heart rate, especially in the recumbent posture; (4) spots appearing before the eyes, and giddiness but seldom actual fainting; (5) headache. It is usually related that one or more of these symptoms always appears during exertion, but may be present during rest. In a few instances, a well defined history of mental or "nervous" diseases in the family is obtainable; but statistics on this point are meager.

Let it be repeated, the same condition exactly is noted in the raw recruit as in the tried soldier. The latter is referred for investigation, because of his inability to stand effort. The former is suspected in the course of examination, owing to a persistent rate above 100. The condition belongs to the neurocirculatory asthenia category. It is interesting to note in such persons how natural forces have guided their footsteps. If they are of the farming class, their work has been facilitated by tractors or riding. In the various civic occupations, they have sifted into positions necessitating little bodily effort.

Now as to the test that has been of such great aid in our work. If the procedure has been suggested heretofore, it is very probable that its use has not been generally appreciated. Its value lies in the fact that the separation of the more stubborn cases of simple tachycardia from the persistent ones is facilitated. The individual, on direction, drops the head and bends forward to about an angle of 45 degrees, whereupon the rapid heart will retard to a remarkable degree very quickly, sometimes to half of the original rate, if the case is one of simple tachycardia. The other type is not affected at all. Also in the former instance, the rate in the bending position corresponds fairly accurately to the rate in the recumbent posture. It requires less time to resume a nearly normal rate in the former than the latter procedure and is, thus, a quicker method. The test has been applied in a very large number of cases so far with very gratifying results. A certain number of soldiers who have responded to this test have been followed up. They are doing full duty.

This adjunct, in the disposition of a rather difficult group of cases, is recommended for further use and comment by members of the service and the profession.

2. AMYL NITRITE INHALATIONS AS AN AID IN THE DIAGNOSIS OF PRESYSTOLIC MURMURS

A probable explanation of the large number of cases of mitral stenosis reported from the various camps is the fact that fatigue, excitement and the influence of new environments cause the heart tones in many instances to become altered in character. The experience at this camp, where large numbers of recruits are examined, bears evidence to this fact. This has been true to such an extent that in our reports to the Surgeon-General, certain new terms have appeared as characterizing diagnoses, such as "blurring of the first mitral tone" or "reduplication of the first sound at the apex." This has been done simply to indicate that there is possibly some disturbance during presystole, but that there were no other signs present of a definite nature. Also, there has been much discussion among the cardiovascular examiners concerning definite thrills felt at the mitral area. By close observation, however, it is the conviction of this board that the time of the thrill, other than those characterizing mitral stenosis (or a similar lesion at another area) is systolic and due to an overacting ventricle. In most instances, a recumbent position, or exercise, causes the systolic thrills to disappear. As suggested above, the same difficulty has been experienced by other observers, and various tests have been suggested as a means of establishing a certain diagnosis, or excluding it.

Our purpose here is to advance the results of our observation in the use of amyl nitrite inhalations as an aid in this difficulty. The procedure was recommended by R. A. Morison.[1] This investigator suggested, after a fair trial of this drug, that a valuable aid was at hand to eliminate the difficulty in the diagnosis of the existence, or nonexistence, of presystolic murmurs. We have followed his method in each instance.

1. Morison, R. A.: Amyl Nitrite Inhalations in Diagnosis of Mitral Stenosis, Brit. M. J. 1: 452 (April 20) 1918.

The division surgeon procured fifty ampules of amyl nitrite, containing 3 minims each. These were used in all doubtful cases. Of course the influence on the heart, as far as it concerns our experiment, is very similar to the effect of exercise. However, there is one great advantage: It is possible to listen to the heart during its period of increasing activity and acceleration, and there is no attending dyspnea as a disturbing factor. In other words, as the patient administers the drug to himself the observer listens at the apex of the heart until the desired effect of the drug is produced. In this way several phases of increasing cardiac activity are observed. A total of forty-eight cases has been examined, and it is the opinion of the observers that a very valuable aid in diagnosis has been obtained. In ten cases, the doubtful nature of the presystolic sound was intensified to such a degree as to admit of a positive diagnosis of mitral stenosis. In the balance of the cases, the suggestive presystolic sounds were eliminated. It might be said here that the greatest difficulty was experienced in the negro, for here the element of neurosis is clearly manifest, and this influence on the heart produces at times varied changes. Chief among these are a greatly accentuated pulmonic second and a very loud sound at the apex and a thrill at this area, the timing of which is frequently difficult. In such cases we have found recourse to these inhalations valuable.

Naturally a report of this nature partakes entirely of personal experience, as there is no definite way to publish the data. The chief object in presenting our observations is to corroborate thoroughly the findings of Morison, and to suggest the further use of this method.

TREATMENT OF INFLUENZAL PNEUMONIA BY THE USE OF CONVALESCENT HUMAN SERUM

SECOND REPORT

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In a preliminary report,[1] we presented the data of thirty-seven cases of bronchopneumonia, following the present epidemic of so-called influenza, treated with serum obtained from patients who had recovered from a similar pneumonia. Later, in an informal letter to THE JOURNAL, we[2] advised the discontinuance of the compatibility tests, and other modifications to simplify the preparation and administration of the serum.

The present report gives as complete data as were obtainable in 151 cases at the Naval Hospital, Chelsea. This represents all cases of the foregoing type admitted to our wards since the treatment was started. For convenience and completeness, this includes the original thirty-seven cases reported.

In our preliminary report, we also noted that the severity of the disease was on the wane. Naturally, we wished for an opportunity to carry on the work in a field in which the severity of the epidemic was unquestionably great. After several futile attempts to find such a place, there came to us a group of men from the U. S. S. *Yacona*. Here the incidence of the influenza, the complicating pneumonia and the severity of the infection appeared quite comparable with the situation at the beginning of the outbreak. Hence, for comparison, we have considered this group not only in the 151 total cases, but also separately. In addition to this *Yacona* group, it should be noted that eighty cases represent the latter part of the first epidemic, whereas the others represent those in the more recent recrudescence of the epidemic where the severity of the disease has undoubtedly been great, though somewhat less than during the first part of the epidemic. Furthermore, also for the sake of completeness, we are presenting the entire laboratory and clinical procedure.

TABLE 1.—DAY OF PNEUMONIA WHEN SERUM WAS FIRST GIVEN, AND NUMBER THUS RECEIVING IT

Day	No.
First	36
Second	59
Third	25
Fourth	14
Fifth	9
Sixth	1
Seventh	3
Eighth	2
Undetermined	2
Total	151

The accompanying tabulations represent in detail our findings in the cases treated.

The day of the pneumonia on which the serum was first given in the 151 cases tabulated is indicated in Table 1. It is evident that most of the patients received serum within the first four days of the pneumonia, and that the majority received it within the first forty-eight hours. In other words, although most of the patients were seriously ill, they received serum within a time most favorable for serum therapy.

The number of injections of serum each patient received is shown in Table 2. It will be seen that

TABLE 2.—NUMBER OF INJECTIONS OF SERUM EACH PATIENT RECEIVED

No. of Injections	No. of Patients
1	56
2	49
3	27
4	9
5	6
6	3
7	1
Total	151

The average amount given at each injection was 120 c.c.

three injections of serum were sufficient in 132 cases, and that more than two thirds required only two doses and that about one third required only one dose. It is noteworthy that the majority of the patients requiring more than one injection had advanced at least two days in their pneumonia.

IMMEDIATE RESULTS

A chill, as described below, may follow in thirty minutes after injection of the serum. In a few hours,

1. McGuire, L. W., and Redden, W. R.: Treatment of Influenzal Pneumonia by the Use of Convalescent Human Serum, J. A. M. A. **71**: 1311 (Oct. 19) 1918.
2. McGuire, L. W., and Redden, W. R.: Discontinuance of Compatibility Test in Serum Treatment, Correspondence, J. A. M. A. **71**: 1765 (Nov. 23) 1918.

the patient shows decided signs of improvement. The toxic symptoms subside, as indicated by cessation of nausea and vomiting, if present, and disappearance of vasomotor disturbances and headache. The anxious expression of a sick patient is transformed into that of a patient in convalescence; these patients say that they are decidedly better, and often that they are well. The temperature, pulse and respiration begin to fall, the temperature and pulse reaching normal in advance of the respirations. The appetite returns. Signs of improvement or recovery may follow the first injection of serum, or in severe cases a gradual improvement may take place. Two or more injections may be necessary to produce these results, as indicated in the preceding tabulations.

TABLE 3.—PERSISTENCE OF FEVER AFTER FIRST INJECTION OF SERUM

	No.
Normal less than 24 hours	27
Normal in 24 hours	56
Normal in 2 days	38
Normal in 3 days	14
Normal in 4 days	8
Normal in 6 days	3
Normal in 9 days	1
Normal in 11 days	1
Total	148

Of 138 patients, eighty-three recovered by crisis and fifty-five by lysis. As crisis we have considered a drop of temperature to normal within twenty-four hours, accompanied by a corresponding general improvement. A more gradual decline in signs and symptoms we have called lysis.

A summary of the number of days the fever persisted after the first injection of serum is given in Table 3, which represents 148 patients who recovered from influenzal pneumonia. Three of this group later developed a hemolytic streptococcus bacteremia and empyema, followed by death. The other three necessary to make our group of 151 cases represent the deaths.

As indicated above, the greater number became normal within forty-eight hours after the first injection of serum.

TABLE 4.—FEBRILE PERIOD OF PNEUMONIA

Day of Termination	No.
First	9
Second	21
Third	42
Fourth	28
Fifth	19
Sixth	12
Seventh	5
Eighth	1
Ninth	1
Thirteenth	1
Undetermined	6
Total*	145

* There were six deaths.

The total febrile period of the pneumonia in this series of cases is given in Table 4. It will be noted that seventy-two, or 51.7 per cent., of this number ran a pneumonia course in three days, and that 119, or 85.6 per cent., were normal in five days. This is a decided shortening of the disease.

The length of time the lung signs persisted, after the temperature remained normal, varied as to the amount of lung involvement and the time in the pneumonic complication when serum was administered. Those cases in which serum was given early in the disease, before extensive consolidation occurred, cleared more readily, while in those treated later in the disease, the physical signs remained a week or ten days and in some cases beyond that period. A striking feature in many cases is the persistence of the signs of consolidation during convalescence.

In several cases that are not included in the 151 reported, serum was given before definite signs of consolidation appeared. That is, only râles were present, accompanied by a high temperature, following influenza. These patients promptly recovered and did not develop consolidation, and it is believed that pneumonia may have been prevented.

The data on white blood counts taken on the group are incomplete. We attempted to have such counts in all cases, but when we came to tabulate, we found that in the early part of the work a number had been missed. However, this group represents 130 cases (Table 5). It is quite evident from this table that the vast majority of our influenzal pneumonias have had either a normal white blood count or a leukopenia.

TABLE 5.—WHITE BLOOD COUNTS

Day of Pneumonia	White Blood Counts 10,000 or Under	Over 10,000
1	36	7
2	30	4
3	18	2
4	11	6
5	2	5
6	3	3
7	5	1
8	1	4
9	0	0
10	1	4
11	1	4
12	0	..
13	0	2
Total	108	42

The extra twenty counts represent additional counts in a number of the cases.

It is noteworthy that all cases that did not respond readily to serum treatment were included in the group having high white counts, although many with high counts did respond readily. The foregoing group of high counts also includes all who showed the hemolytic streptococcus complication. Our differential counts show some tendency toward an increase in lymphocytes and a corresponding decrease in polymorphonuclear leukocytes; but there is no constancy in the findings.

It has been our custom to consider all patients with physical signs of pneumonia and a white blood count of 10,000 or 12,000 or under, as presumptive influenzal bronchopneumonias, and to start convalescent serum treatment immediately, especially if the history of onset is suggestive. But, if the count is higher, typing of sputum is done. Even if the count is high and pneumococci of Group IV are present, the convalescent serum is given with the idea that the Group IV may represent only a part of the infection or even only a mouth organism.

Complications were infrequent. One patient developed acute otitis media. One had intense jaundice, lasting over a week. Three had pleurisy, one phlebitis and two an evident relapse after an apparent complete recovery. Since the recurrence of the epidemic, among the last cases, seven streptococcic infections followed;

these were similar to the streptococcic pneumonias and empyemas present last winter. Six of these patients developed a streptococcic empyema, three of whom died. A pure culture of streptococci was obtained from the blood of one of the other patients. These streptococcic infections followed when the patients were convalescing from influenzal pneumonia, a normal temperature of from two to four days being present in the interval. This accounted for three of our deaths.

OUTBREAK ON THE YACONA

The U. S. S. *Yacona* left Bermuda, November 5. Influenza was epidemic, but reported to be well in hand there at that time. Eight hospital corpsmen of the Navy came North aboard the *Yacona* as passengers, having been on duty in Bermuda, assisting in the epidemic of influenza. They were left at New York. The ship arrived in New York on the 11th; liberty was granted; coal and provisions were taken on, and the ship sailed on the 15th for New London, arriving the same day. The first case of influenza developed in New London on the 18th, another on the 19th, and the third on the 20th. The ship sailed for Halifax on the 21st; six cases developed that day and she put into Boston, arriving the 22d.

Fourteen cases of influenza were admitted to the Naval Hospital, Chelsea, November 22; eighteen on the 23d; nineteen the 24th; nineteen the 25th; five the 26th, and two the 29th, a total of seventy-seven, plus three at New London, making a total of eighty cases of influenza from a crew of ninety-six. Seventy-four men and six officers developed the disease, or 83.3 per cent.

It seems probable that the source of infection was at New London, as the first case appeared three days after arrival there; this was well within the incubation period.

This outbreak was virulent, resembling the cases admitted during the early part of the epidemic in Boston. The patients were admitted with high fever, prostration, headache, injected eyes, dusky skin, albuminuria and low white blood counts.

The severity is well illustrated by the one death that occurred three days after the initial symptoms of influenza. The patient died of a diffuse bronchopneumonia, living only twelve hours after admission to the pneumonia ward, he being then semiconscious, with temperature, pulse and respiration very high. This is the shortest course of the disease of which we have record in this hospital.

TABLE 6.—SUPPLEMENTARY REPORT OF CASES OCCURRING ON THE U. S. S. YACONA

	No.
Complement, men	87
Officers	9
Total	96
Influenza cases	80
Bronchopneumonias	20
Deaths	1

Of the seventy-seven patients in this hospital, twenty developed pneumonia. All pneumonia patients received convalescent human serum immediately when a diagnosis of bronchopneumonia was made. Every influenza patient was examined at least daily to detect a beginning pneumonia, and twice daily if the temperature remained high beyond the second day of the influenza. One patient had a complicating Type I pneumococcus for which the appropriate serum was given. Two patients, after a prompt subsidence of the influenzal pneumonia, developed a streptococcic lung infection; one was complicated with empyema. These secondary invaders follow in the path of the influenzal pneumonia and are to be expected.

We believe that the low mortality was directly due to the use of convalescent human serum, as the patients immediately improved and rapidly recovered after its use: the serum was efficacious in this group of severe cases.

METHOD OF FOLLOWING CASES

The diagnosis of pneumonia in every case was made by at least two clinicians, and, in the majority of the cases, the diagnosis was confirmed by Dr. F. Van Nüys, Lieutenant, junior grade, U. S. N. R. F., one of the senior members of our medical staff, who was called in as a disinterested observer. Daily notes were dictated to a Red Cross worker in every case till the patient was convalescent. From these notes, from the laboratory reports and from the temperature charts, we have collected our data. The following is a statement from Dr. Van Nüys:

> Up to October 9, I treated pneumonia patients according to regular methods, with good nursing, fresh air, hydrotherapy and symptomatically with drugs.
>
> On the above date, I took clinical charge of that ward wherein serum treatment was being used.
>
> The contrast between the results of the two methods of treatment was very striking.
>
> In a ward under the old treatment, the atmosphere was predominately tragic—many patients desperately sick, cyanotic, dyspneic, coughing and often in agony. The convalescents were subdued by suffering about them.
>
> In the serum ward the atmosphere was that of hope and cheerfulness. A few patients were quite sick, but usually comfortably so. The rest practically convalescent.
>
> These contrasting pictures are fixed indelibly in my mind.
>
> With the old treatment, my mortality figures were close to 28 per cent.—identical with those of another pneumonia ward under Dr. Joseph A. Meledy.
>
> With the serum treatment, mortality was practically nil, except in those pneumonias entering too late for early use of serum.

PROCEDURE

Routine Wassermann tests are done on all patients admitted with pneumonia so that by the time for bleeding there is no delay. In outside practice, blood is obtained at the time of the first injection of serum.

The amount of blood obtained from each donor totals about 1,000 c.c.; that is, about 500 c.c. are taken at two succeeding bleedings, at an interval of a day or two. No untoward symptoms aside from slight faintness in two or three have ever occurred in a series of over 500 donors, so we believe that 500 c.c. are well within the limits of safety in an adult weighing 120 pounds or more. Most patients seem to feel better after the bleeding, especially in the matter of an increased appetite.

The time of bleeding after temperature reaches normal has been set at about ten days. However, we have bled even earlier than this. For an upper limit, we have considered about six weeks. Naturally, this is arbitrary in the absence of any method of titrating the serum. However, at one time, we were short of serum and were compelled to use that obtained from men who had been well for from six to eight weeks. We were impressed with the lowered potency of this pooled serum.

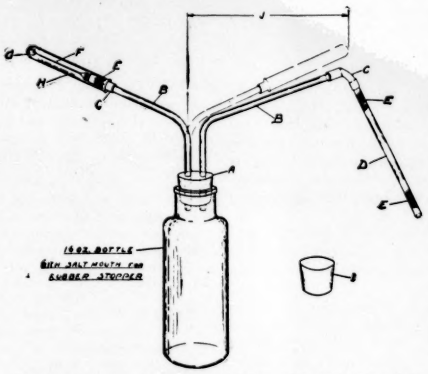
The apparatus for obtaining blood, as shown in the accompanying illustration, is wrapped in cloth and autoclaved. Negative pressure is produced either by an assistant sucking on tube *E*, or by connecting an aspirating bottle to *E*, with

a tourniquet adjusted on the donor's arm so that the pulse is still palpable; there is usually no difficulty in getting the desired amount. At times, especially if the donor has not been up, there is a collapse of the vein over the end of the needle. This is due chiefly to an improper adjustment of the tourniquet or too much negative pressure or both. This can frequently be remedied by having the donor open and close the hand. In obtaining blood from men, there is usually not enough discomfort to require the use of a local anesthetic, but in women, it is advisable to inject a little 1 per cent. procain at the point of proposed puncture. An equipment should include about ten complete bleeding sets with a dozen extra bottles. For centrifugalizing, 50 c.c. or larger tubes are advisable.

Preparation of Serum.—The blood is allowed to remain in the incubator at body temperature for an hour shortly after it is collected. By this time, if one is pressed for serum, he can obtain about 100 c.c. from each 400 or 500 c.c. of blood; otherwise the blood is placed in the refrigerator for from five to six hours, or over night. Then the serum is decanted and centrifugalized to clear it of any bits of fibrin or red cells, etc., after which all the serum obtained is pooled. To this pooled serum are added 20 c.c. of 1.5 per cent. tricresol made up in physiologic sodium chlorid solution for every hundred c.c. of serum so that the tricresol content is about 0.3 per cent. The serum is then stored in 120 c.c. amounts. Serum prepared this way has been used with excellent results six weeks after storage. Frequently what appears to be fat accumulates on the surface of the serum; this goes into solution on heating to body temperature, and apparently is of no significance.

We formerly carefully took cultures of all serum before tricresolizing, but when we found no positive cultures of possible contaminating organisms in 200 serums, we considered the procedure sufficiently sterile to warrant the omission of cultures.

The amount of serum obtained from 500 c.c. of blood varies from 175 to 225 c.c. This seems to represent about the serum content of that amount of blood so that there is little, if any, waste of that part of the blood which contains all or most of the antibodies.



Bleeding apparatus: *A*, two hole rubber stopper K-33; *B*, glass tubing; *C*, rubber tubing; *D*, glass tubing for suction; *E*, cotton plugs; *F*, 18 gage needle; *G*, stylet; *H*, small test tube; *I*, blank rubber stopper K-33; *J*, the left tube turned for convenience in sterilizing.

Administration of Serum.—We have found it convenient to give the intravenous injection of serum by means of a 120 c.c. glass syringe, or by the use of a 50 c.c. Lüer syringe connected to a three-way cock and proper tubing, as used in administering arsphenamin. Rarely does the procedure occupy more than ten minutes. The serum is first warmed to slightly above body temperature. We have given as high as 250 c.c. in one dose.

SERUM REACTIONS

While we were doing compatibility tests, four patients had chills lasting from ten to thirty minutes, coming on about thirty minutes after the administration. These chills on the whole were less severe than those following horse serum. Since the discontinuance of the compatibility tests and the pooling of serum, the percentage of chills has been about the same or less. There is usually a rise in temperature, pulse and respiration, shortly after the injection, but never any sign of anaphylaxis. Never have we seen urticaria at any time after the use of human serum, or other signs or symptoms of serum sickness.

It has been our desire, from the beginning, to run parallel control groups without serum treatment, with treatment by use of "normal" human serum, and with treatment by use of serum from those having had influenza without lung complication. For obvious reasons, we were unable to allow patients with the pneumonia complication to go without serum treatment. However, it seemed justifiable to give some men one dose of serum from normal individuals, or from those recovering from influenza alone. Again, we were unable to complete the experiments but were able to get suggestive evidence. The patients chosen for the experiments were taken at random from the groups as they were admitted. The results are reported for what they may be worth.

Incomplete experiments were conducted with pooled serum from men who never had influenza, so far as we could find. Serum was obtained from ten so-called "normal" donors. This was pooled and tricresolized, and then 100 c.c. were given to five influenza patients admitted to the ward. At the same time, three other patients taken at random received 100 c.c. of the "anti-influenza-pneumonia" serum. The next day, all who had received the "normal" serum showed the same or a higher temperature, while the three receiving the same dosage of anti-influenza-pneumonia serum showed a drop of temperature to normal. Unfortunately for scientific accuracy, we were compelled to give the anti-influenza-pneumonia serum to the other five patients instead of continuing treatment with "normal" serum. The five showed normal temperatures after the first injection of the anti-influenza-pneumonia serum. We feel that this is suggestive, but not conclusive, though it corresponds with similar experiments earlier in the epidemic.

Incomplete experiments were conducted with pooled serum from men who had influenza and who never showed definite consolidation. Serums from five such patients were pooled and tricresolized, and a 100 c.c. dose was given to each of three patients sent to the pneumonia ward. Two others were given an equal dose of immune serum. Two of the first group showed slightly higher temperature the next morning; one showed a drop of 2 degrees. The two receiving the immune serum showed a normal temperature the next morning. On further examination, it was found that all had a definite area of consolidation except the man receiving "normal" serum, whose temperature fell 2 degrees. The first two showed a normal temperature sixteen hours after the injection of 100 c.c. of immune serum. Here again evidence is incomplete, but suggestive, as noted in the previous article.

In addition to the foregoing experiments, it was early noted by us, when serum from single patients was being used, that certain serums had no measurable

effect. On further investigation, it was invariably found that such serums came from men who had only a small lung involvement, or had only a small involvement and had recovered rapidly under serum treatment, or else had been obtained from individuals in whom the disease had run a long course with a swinging temperature and an increasingly high white count. Because of earlier findings in a few mild cases treated with serum, we were led to state that patients who had received serum did not yield potent serum. However, recent experience has demonstrated that serum from such patients has potency equal to that from untreated patients.

COMMENT

From the data presented, it is evident that a low white blood count is characteristic of the usual bronchopneumonia following influenza. Hence it is of prime importance before serum therapy is instituted. In our experience, a low respiration and low pulse rate, compared to the lung involvement and high temperature, aid in making a diagnosis of influenzal pneumonia.

At present, the only method of testing the potency of the convalescent serum is by its effect on the patients. In our observations here, it would seem that one of the first reactions is against toxic symptoms, such as nausea, vomiting, vasomotor disturbances and loss of appetite, so that it might be safe to say that the serum has some antitoxic action. Beyond this, we believe that discussion at the present time would be futile.

The method of obtaining and administering the serum has been reduced to its simplest form, so that little difficulty need be experienced in establishing the treatment, at least in centers. At the present time we would suggest the establishment of bronchopneumonia wards in various hospitals, with one man in charge of the serum treatment. Then by starting with four or five donors recently recovered from the disease, sufficient serum can be obtained to institute treatment. This, once started, can be continued, provided sufficient interest is taken in the procedure. We are convinced that the results will fully repay one for the effort.

That the tricresol is not an important factor in the results obtained is evidenced by the fact that no difference has been noted in the action of the preserved and unpreserved serum.

Influenza patients who have a continuous high temperature persisting over three days, or who have a secondary rise of temperature immediately following influenza, should be regarded as probably developing influenzal pneumonia. Signs of consolidation may not be present at this time, but patches of fine râles can usually be found. These signs, taken in conjunction with a persistent low white blood count and in the absence of other complications, almost invariably mean a beginning influenzal pneumonia. This is the most favorable time to start serum therapy. If serum is given at this early stage of pneumonia, favorable reaction is universal. If one depends on a rising pulse and respiration, as well as on the high temperature, he will frequently allow a patient to pass beyond the time most favorable for any kind of serum therapy.

SUMMARY

Out of 151 patients with bronchopneumonia following influenza treated by human convalescent serum, three have died without complications, and three have died after a complicating hemolytic streptococcus empyema, making a total of six deaths, or 4 per cent.

Most of the cases were treated early in the pneumonia complication, and hence were well suited for serum treatment.

Out of 151 patients, 132 received three doses of serum or less; about two thirds required only two doses, and over one third but one injection. Those who received more than one injection for the most part had advanced to at least two days in their pneumonia. The average dose used here is 120 c.c.

Out of the 138 patients, eighty-three recovered by crisis, and fifty-five by lysis.

In 148 cases, over half showed a normal temperature within forty-eight hours after the beginning of serum treatment.

The febrile period of the disease was decidedly shortened, though the lung signs persisted.

Several cases without definite signs were treated with serum. These are not included in the group reported. In some of these cases, it would seem that possibly a pneumonia was prevented.

Incomplete experiments with pooled "normal" serum and with pooled serum from uncomplicated influenza patients indicate a lack of curative power in such serums. Pooled serum from patients treated with immune serum seems to have about the same potency as that from the earlier untreated cases.

Over half the cases treated were received during the recent recrudescence of the epidemic, when there has been no doubt about the severity of the pneumonia complication. Complications have been infrequent.

There has been no increase in chills since the compatibility tests were discontinued. We have never seen urticaria or any other signs of serum sickness after the use of human serum.

Bronchopneumonias with a white blood count below 10,000 or 12,000 are most favorable for treatment with this serum, though a number with much higher counts responded readily.

CONCLUSIONS

Pooled serum from convalescent influenzal bronchopneumonia patients at this hospital has greatly reduced mortality, has shortened the course of the disease, and has proved almost a specific, not only during a waning epidemic but also during the more recent severe recrudescence.

U. S. Naval Hospital.

Treatment of Chronic Asthma.—Dr. M. Machado emphasizes the necessity for putting an end to the predisposition which brings on the attacks of true asthma. This constitutional predisposition is best combated, he has found in his experience, by iodid and emetin. "The iodid acts on the structure and functioning of the cells while the emetin regulates the apparatus of the internal secretions. The two combined break up the diathesis which is responsible for the asthma." He gives the emetin by injection of 0.04 gm., increasing by 0.01 gm. a day until the dose is 0.08 gm.—a total up to 0.30 or 0.38 gm. in the course of five or six injections. After this he gives a course of sodium iodid by intravenous injection of 20 c.c. daily or on alternate days, increasing by 10 c.c. each time until the 100 c.c. dose is reached. From twenty to thirty injections may be required to overcome the chronic tendency to asthma. It only gradually subsides. There has never been recurrence in any of his cases thus treated; in some the interval since has been three years. His communication appeared in the *Gazeta Medica da Bahia*, **50**:97 (September) 1918. No further details of the technic are mentioned.

MENINGEAL CONDITIONS NOTED DURING THE EPIDEMIC OF INFLUENZA

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In reviewing the cases of meningeal involvement developing during the epidemic of influenza, my attention has been drawn to three points:

1. Very few cases of meningitis have been due to the influenza bacillus. I have seen two cases, and have examined the fluids of a third. In previous years, I have seen as many in an equal length of time. If this epidemic was due to the influenza bacillus, it seems strange that it did not more frequently invade the meninges.

2. During October and the early part of November, I saw a larger number of cases of epidemic meningitis than is usual at that season, and the number dropped off subsequently. The great majority of these cases gave a history of an attack, clinically influenza, immediately preceding the development of the meningitis. In some instances, the meningitis appeared as the influenza was subsiding, in other instances after convalescence was established. The cases themselves were not unusual in any way. Some were mild and some severe—about as the cases usually run. Cultures of the spinal fluids were made on blood as well as on glucose ascitic agar to see if any hemoglobinophilic bacilli were present with the meningococci, but there was no evidence of a mixed infection.

Whether the resistance of the individual, both generally and locally in the mucous membrane of the nasopharynx, was lowered by the attack of influenza, thus making him fall more readily a victim to meningitis, or whether the meningococcus attained a heightened virulence through its association with the causative agent of the influenza epidemic, is a question entirely open to discussion.

3. In about twenty instances, I have seen cases, usually during the convalescence from attacks clinically influenza, in which meningeal symptoms have developed. There were present headache, some stiffness of the neck, Kernig's sign, and extreme apathy and drowsiness—in many ways the picture of an early tuberculous meningitis. Lumbar puncture has revealed a clear fluid under increased pressure. This fluid has shown an increase from slight to marked, in the number of cells, with a preponderance of mononuclears, a well marked increase in the albumin and globulin, a normal reduction of Fehling's solution, and no organisms either by smear or culture. In most instances a Wassermann test has been performed, and in all cases have been negative. Guinea-pigs inoculated with a number of the fluids suffered no ill effects. Such a spinal fluid in no way suggests the invasion of the meninges by a pyogenic micro-organism. The mononuclear cells and the normal reduction of Fehling's solution are practically never present in a pyogenic meningitis. This in addition to the absence of organisms by smear and culture is evidence against a meningitis.

This spinal fluid reaction is quite different from that usually found in meningism occurring in pneumonia, gastro-intestinal conditions in children, and acute infections. In these conditions, while the meningeal symptoms are often more pronounced than in the cases I have been describing, the spinal fluid, with rare exceptions, is normal in the chemical and cytologic constituents. The exceptions referred to occur mainly after severe and prolonged convulsions, in the convulsive type of whooping cough, and in cases in which the puncture has been done shortly before death, the circulation having been depressed for some time. In these instances, the changes in the cytology and chemistry are, as a rule, less than have been found in the influenzal cases. The spinal fluid changes that I have just described are similar to those in cases of poliomyelitis and poliencephalitis. From the spinal fluid examinations and the clinical picture it seems possible that we are dealing with an encephalitis secondary to the influenzal attack. With one or two exceptions, the patients have improved after the lumbar puncture and made a good recovery.

Two cases have been a little different from the others:

One of the patients developed motor disturbance—weakness of the muscles of the feet and some paralysis of the fifth nerve. The spinal fluid showed a very marked increase in the albumin and globulin, and a slight increase in the number of cells. The reduction of Fehling's solution was normal. The gold chlorid curve was 00012455550. The Wassermann test was negative. The condition of this patient completely cleared up.

The other patient showed a good deal of mental disturbance, which has continued for over six weeks. It takes the form of a delirium, developing suddenly at intervals and lasting from ten to fifteen minutes. At other times the mentality is clear. He has had four lumbar punctures, and the spinal fluid has remained practically unchanged. He has a considerable degree of arteriosclerosis, without a greatly increased blood pressure.

Menninger[1] recently described nearly a hundred cases of psychoses following influenza. In his cases the spinal fluids were negative, with one exception.

Three cases recently seen in the Willard Parker Hospital have been of a more severe type than the earlier cases and somewhat different. Two of these patients have shown marked tremor. One of these has been delirious; he is still living. The other showed marked cardiac and respiratory arrythmia suggesting an involvement of the cardiac and respiratory centers. This patient died. The third lies motionless with the limbs rigid, has to be fed by gavage, and his face has the masklike expression described by the English writers in connection with cases which they have been reporting under the diagnosis of lethargic encephalitis. All these cases bear a resemblance to the descriptions given of this condition, which has been somewhat prevalent in England for about a year. The changes in spinal fluids in the cases I have seen seem greater than the changes the English have reported, but they have not done lumbar punctures in all their cases and they do not state at what stage of the disease the punctures were done. Moreover, different workers read chemical and cytologic changes in the spinal fluids differently.

Accounts of lethargic encephalitis have been given by Buzzard[2] and by Hall,[3] and it has been discussed editorially in THE JOURNAL.[4]

1. Menninger, K. A.: Psychoses Associated with Influenza, J. A. M. A. **72**: 235 (Jan. 25) 1919.
2. Buzzard, E. F.: Lancet **2**: 835 (Dec. 21) 1918.
3. Hall, A. J.: Brit. M. J. **2**: 461 (Oct. 26) 1918.
4. Enceptalitis Lethargica: A New Disease? editorial, J. A. M. A. **72**: 414 (Feb. 8) 1918.

LETHARGIC ENCEPHALITIS

PRELIMINARY REPORT

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Last fall THE JOURNAL called attention editorially[1] to a series of small epidemics which had been reported during the spring in England and France and which were characterized by cranial nerve palsies, and fever. The French epidemic presented a mortality of 50 per cent., the fatal cases being due to the involvement of vital bulbar centers. The disease was variously regarded as botulism, poliomyelitis and some new infection, although the bacillus of botulism had not been isolated and there were reasons for doubting its identity with poliomyelitis. The spinal fluid in these cases was spoken of as being normal, and the spinal nuclei were apparently never involved. Of the cranial nerves, those having to do with the extra-ocular muscles were so commonly involved that the disease came to be spoken of as infectious ophthalmoplegia. Besides the third, fourth and sixth, the seventh, ninth, tenth and twelfth were said to be sometimes affected. Other symptoms spoken of as common were nystagmus, tremor, drowsiness, delirium, asthenia, retention of urine and constipation. THE JOURNAL also lists in its index a number of articles under the caption "lethargic encephalitis," which describe somewhat similar cases in France, Italy and South America. Drowsiness and coma were prominent in these cases.

At Camp Lee there were recently observed a number of cases which seem to fall into this general category, and it seems worth while to publish a preliminary report, as there is some probability that the disease will become much more widespread. The commonest features observed in these cases are vertigo, diplopia, headache, slight fever and a spinal fluid showing a definite pleocytosis (from 20 to 66 cells) of the lymphocytic type. There have been some variations, which will be noted in the case histories. It is worth while recording that there have been no cases of frank poliomyelitis in this camp. The patients came from widely separated organizations. The only fatal case was the first, which will be reported more in detail.

REPORT OF CASES

CASE 1.—*History.*—A corporal, C. O. T. S., aged 23, admitted, Oct. 23, 1918, had had an attack of influenza six weeks previously. October 28, he had noticed diplopia and some difficulty in swallowing. He was conscious, rational, and febrile except for part of one day. Of the cranial nerves there was bilateral involvement of the third, sixth, ninth and twelfth. There was no spasticity, and the reflexes and sensation were normal. The eye grounds were normal except for slight engorgement of the veins. Physical examination was otherwise negative. The pulse was slightly accelerated (averaging 90). Leukocytes, October 30, were 9,200; polymorphonuclears, 58 per cent.; lymphocytes, 30 per cent.; large mononuclears, 10 per cent.; transitionals, 2 per cent. The spinal fluid, October 30, was sterile, with 85 cells per cubic millimeter; the globulin test was negative, sugar present, Wassermann test negative. The blood Wassermann was ± (there was no history of infection). The patient showed intermittent difficulty in breathing, and died, November 2, of respiratory failure.

Necropsy.—Opening of the spinal canal disclosed the cord with its membranes lying in the spinal canal without distortion or bulging of the meninges. When the membranes were opened, the blood vessels of the posterior surface of the cord were found tortuous and filled with blood; but the surface of the cord, and the membranes, presented no sign of inflammation. There was no exudate nor excessive fluid in the meningeal space. This description of the cord applies to the different areas of the cord, including the upper cervical region. On section of the cord in the cervical region, on gross examination, there was apparently no change in the cross section of the organ. As one reached the middle dorsal region, going down to the lumbar region, the cord was found to be very much softer, especially in the middle dorsal region. This became less marked as one went down the cord toward the lumbar region. These changes may have occurred postmortem, as they were noted in the most dependent portion of the cord.

On removal of the skull, the dura remained adherent to the calvarium. The hemispheres presented no thickening of the pia mater, but the vessels were very much engorged and arborescent over the convolutions. On removal of the cerebrum, the base of the organ presented the same appearance as the surface; the vessels were arborescent, and there was no thickening of the pia and no exudate.

The pituitary body and the optic chiasm presented nothing of note.

On section of the hemispheres, the centrum ovale presented dilatation of the blood vessels, which appeared as small, punctate bodies throughout the surface. On inspection, the corpus callosum appeared normal; but on attempt to section, it was found to be soft and mushy. All the tissues of the lateral ventricles were soft. The optic thalamus was softened. The velum interpositum and the choroid plexus presented the same condition as the vessels of the surface of the brain: that is, the vessels were prominent, tortuous and arborescent. There was no excess of fluid in the ventricles, but all the tissues surrounding them were softened, the brain substance as well as the tissues of the floor. The third ventricle presented nothing of note, except general softening of the tissues of the floor. The pineal gland was swollen. The iter a tertio ad quartum was patulous. On section of the basal ganglions a small hemorrhagic spot was found in the right hemisphere immediately adjoining the internal capsule. This spot was about 1 mm. in diameter. On the left side, the basal ganglions presented nothing of note. Anteroposterior sections through the hemispheres presented nothing of note. Sections through the cerebellum presented nothing of note. There was, however, a universal softening of the brain tissue which made it very hard to section without destroying it in the attempt. After sectioning, the organ was apparently collapsed, and there was no possibility of returning the sectioned portion back to the former relation on account of this softening.

The dura through the base of the skull was glistening and smooth, and presented nothing of note.

The findings otherwise were negative.

CASE 2.—A first lieutenant of Company D., Sixty-Second Infantry, aged 26, admitted, Dec. 24, 1918, had had an attack of influenza two months previously. For two days he had noticed diplopia, headache, anorexia and constipation. He stated that he had sometimes had diplopia before when his digestion was out of order. Examination disclosed weakness of the right sixth nerve, and absence of the cremasteric and right plantar reflexes, but otherwise was neurologically negative. The next day the plantars were normal and there was some increase of the biceps and right knee jerk. There was fever with a maximum temperature of 102, for four days, by which time the patient felt well. The urine was negative, leukocytes, December 24, 8,550; polymorphonuclears, 45 per cent.; lymphocytes, 43 per cent.; large mononuclears, 6 per cent.; eosinophils, 4 per cent.; basophils, 2 per cent. The spinal fluid, December 26, showed 4 cells per cubic millimeter; the globulin test was negative; sugar was present.

The transient sixth nerve palsy with fever seems to justify the inclusion of this case in the series, in spite of the negative spinal fluid and history of previous trouble with vision.

CASE 3.—A private of the 305th Fire and Hose Company, Q. M. C., aged 31, admitted, Jan. 18, 1919, had had influenza in October, 1918. He noticed diplopia the day before admis-

1. Is Epidemic Poliomyelitis Prevalent in England and France? editorial, J. A. M. A. 71:1221 (Oct. 12) 1918.

sion, and complained of headache, vertigo and constipation. There was slight fever for twelve days, with gradual clearing up of symptoms. Neurologically the examination was negative except for sixth nerve palsy, and nystagmus. The urine was negative. The leukocyte count, February 4, was 7,200; polymorphonuclears, 67 per cent.; lymphocytes, 24 per cent.; large mononuclears, 8 per cent.; esinophils, 2 per cent. The spinal fluid, February 4, showed a slight increase of pressure, 20 cells per cubic millimeter; 88 per cent. lymphocytes, and

SPINAL FLUID

Case	Day of Disease	Cells	Lymphocytes	Large Mononuclears	Polymorphonuclears	Globulin	Sugar	Wassermann
1	3	85	..	..	..	minus	plus	minus
2	4	4	..	..	..	minus	plus	minus
3	18	20	88	12	..	minus	plus	minus
4	15	64	93	5	2	minus	plus	minus
5	15	40	74	26	..	minus	plus	minus
6	10	66	92	8	..	minus	plus	minus
7	4	7	..	..	..	minus	plus	minus
8	15	29	92	8	..	minus	plus	minus

12 per cent. large mononuclears. The globulin test was negative; sugar was present; the Wassermann test was negative.

CASE 4.—A corporal, Company 6, Second Battalion, D. B., aged 23, admitted, Jan. 23, 1919, had acute otitis media, January 1, which had completely healed. For four days he had complained of diplopia and vertigo, and later of nervousness, insomnia, weakness and constipation. The retinal veins were swollen and the left disk blurred. There was no evident defect in muscle balance when examined; the knee jerks were exaggerated and later transient, but there was well marked ankle clonus. Otherwise the neurologic examination was negative. There was slight fever for ten days, which gradually improved. The urine was negative. The leukocyte count, February 6, was 7,600; polymorphonuclears, 69 per cent.; lymphocytes, 22 per cent.; large mononuclears, 8 per cent.; eosinophils 2 per cent. The spinal fluid, February 3, showed 64 cells; there were 93 per cent. lymphocytes, 5 per cent. large mononuclears, and 2 per cent. poiymorphonuclears. The globulin test was negative; sugar was present; the Wassermann test was negative; the spinal fluid was sterile.

CASE 5.—A private, Company 1, First Battalion, I. R. T. C., aged 22, admitted, Jan. 24, 1919, had had influenza in October. For four days he had complained of vertigo, nervousness, insomnia, and "gas in stomach." There was no diplopia. Examination was neurologically negative except for irregular pupils and rather overactive knee jerks. Low fever and vertigo led to lumbar puncture, February 4, which revealed 40 cells per cubic millimeter, 74 per cent. of which were lymphocytes; the globulin test was negative; sugar was present; the Wassermann test was negative. The blood and the urine were normal. The leukocyte count, February 4, was 9,000; polymorphonuclears, 72 per cent.; lymphocytes, 22 per cent.; large mononuclears, 4 per cent.; eosinophils, 2 per cent. Although this patient complained of no diplopia, the vertigo suggests that there may have been some muscular defect, as in the other cases, although not enough to cause double vision.

CASE 6.—A private, Company 10, Third Battalion, I. R. T. C., aged 24, admitted, Jan. 31, 1919, a week before admission began to complain of headache, constipation, nausea, diplopia and vertigo. Examination revealed external ophthalmoplegia, overactive knee jerks, and temperature ranging from 98 to 100. The leukocyte count, February 4, was 8,200; polymorphonuclears, 62 per cent.; lymphocytes, 26 per cent.; large mononuclears, 10 per cent.; eosinophils, 2 per cent. Examination of the spinal fluid, February 3, revealed 66 cells; 92 per cent. lymphocytes, and 8 per cent. large mononuclears. The globulin test was negative; sugar was present; the Wassermann test was negative.

CASE 7.—A first lieutenant, M. C., of the mustering office, aged 31, admitted, Feb. 3, 1919, four days before admission noticed vertigo, weakness, drowsiness, slight rhinitis, photophobia and diplopia. He also complained of a sensation of "thickness of the tongue." After admission to the hospital no diplopia nor neurologic defects could be made out. The temperature was normal, the urine, blood and spinal fluid, February 3, normal, the latter showing 7 cells per cubic millimeter. There was no globulin; sugar was present. The Wassermann test was negative.

CASE 8.—A private, Company I, Sixty-Second Infantry, aged 24, admitted, Jan. 31, 1919, about ten days before admission began to complain of vertigo, and later of weakness and constipation. After admission he was very drowsy, being aroused with difficulty. There was continued high fever; February 3, mild delirium; February 4, difficulty in swallowing, and February 5, left facial palsy. He was still seriously ill. Blood culture was sterile, Feb. 2 and 4. The leukocyte count, February 4, was 7,900; polymorphonuclears, 67 per cent.; lymphocytes, 20 per cent.; large mononuclears, 12 per cent.; eosinophils, 1 per cent. The spinal fluid, February 5, was under increased pressure, and showed 29 cells per cubic millimeter, 92 per cent. lymphocytes, and 8 per cent. large mononuclears.

The eight cases occurred in a comparatively short space of time. They were characterized by a tendency to cranial nerve involvement, fever, and slight changes in the spinal fluid. An increase in their occurrence is to be expected.

VESTIBULAR REACTIONS IN FIVE HUNDRED AND FORTY-ONE AVIATORS

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It is well established that the vestibular apparatus—the internal ear, its nerve pathways and centers—is a mechanism of great importance.

Without dwelling too much on the requirements for an aviator, attention is called to the fact that an excellent physical equipment is demanded of the man who qualifies for flying; hence the rigid examination that is given, which includes the usually accepted methods of examining the vestibular apparatus.

For more than a year, while at work in the Air Service Division, Surgeon-General's Office, I had the opportunity of organizing physical examining units in different parts of the country, which enabled me to

AVERAGE NYSTAGMUS OF FIVE HUNDRED AND FORTY-ONE AVIATORS

Number of Men Examined	Flying Period, Hours	Average Nystagmus Turning to Right Seconds	Average Nystagmus Turning to Left Seconds
156	0 to 25	25 49/156	25 25/156
169	25½ to 50	25 85/169	25 40/169
59	50½ to 75	19 1/59	18 27/59
37	75½ to 100	24 19/37	25 4/37
21	100½ to 150	25 18/21	25 8/21
34	150½ to 200	26 4/34	25 8/34
32	200½ to 300	23 5/32	23 12/32
14	250½ to 300	23 9/14	25 5/14
19	300½ to 1,000	26 4/19	25 11/19

study various types of applicants, and at the same time gave me a chance to develop a constant technic in the examining work.

It is with the vestibular reactions that this paper deals, owing to the amount of discussion in certain articles concerning these tests, and the doubts cast regarding their value. In these papers statements have been made that repeated stimulation, such as experimental whirling or flying, lessens the reactions. If this were so, it would be an important point in considering aviation, because aviators are subject to constant stimulation of the vestibular apparatus during flight. After the aviator had flown for a while there

would be no means of judging the condition of this mechanism because of the absence of nystagmus and vertigo; for the loss of these reactions is significant of some impairment of the vestibular apparatus.

With this in view, a series of examinations were made of fliers from Barron, Carruthers and Taliaferro fields. The data presented in the accompanying table are from the first 541 cases examined, the amount of flying varying from that of cadets just arriving to officers who had flown 1,000 hours.

The average nystagmus of accepted applicants from data given by sixty-seven physical examining units showed on turning to the right, 23 seconds and on turning to the left, 23.1 seconds; without dividing this series by the hours of flying, the average on turning to the right was 24.6 and on turning to the left 24.4 seconds. It will be noted that the average nystagmus of the series is slightly higher, probably owing to the fact that there were few fliers examined with less than 20 seconds' nystagmus, while in the examining unit work there were a great many more.

SUMMARY

It is found that nystagmus is not diminished by repeated turnings.

Although vertigo was not timed, past-pointing and falling were slightly diminished in fliers of 100 hours' or more experience, being most noticeable in fliers who have had the greatest number of hours.

As past-pointing and falling are objective signs of vertigo, this diminution was due to the fact that the flier had learned to interpret this vertigo and for the same reason more rapidly recovered his poise.

THE BACTERIOLOGY OF EPIDEMIC INFLUENZA AND PNEUMONIA *

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Perhaps the simplest and most obvious inference that can be drawn from a consideration of the epidemic of influenza that has just passed through this country is that it was something unusual, something that had not been seen for many years, and something that has departed leaving few representative cases that can be regarded as typical instances of the disease. Whatever the cause of the disease may be, it is clear that this agent is one to which the body is not accustomed. In fact, it would almost seem necessary to postulate at the outset that this agent is not commonly present in the body under normal circumstances, because it is difficult to conceive that any bacterium or virus that is even partially adapted to the environment of the human body should suddenly become unadapted and assume such a high degree of invasiveness as the agent of influenza possesses. Moreover, if the cause of influenza is some bacterium or virus related to a variety of bacterium or virus commonly present in normal individuals, then it would seem necessary to postulate that the cause of influenza is a very highly individualized variety.

Without doubt, the epidemic just past is of essentially the same nature as the epidemic of 1889. Then, as in the epidemic under discussion, clinicians recognized two phases or features in the disease: first, the "influenza" proper, which lasted from three to seven days, and the complications which were regarded as secondary and not part of the original disease, though directly due to the damages that it caused. The descriptions of the disease, in England by Robertson and Elkins,[1] in Germany by Strumpell,[2] and in France by Duflocq,[3] make these points clear.

The present report deals with a study of cases of influenza at Camp Lee and Camp Dix. The cases studied at Camp Lee were typical of the disease, the fatal cases being complicated by pneumonia. The studies at Camp Dix were made when the epidemic had abated, and presented more complications, with correspondingly complicated pathologic and bacteriologic findings. A brief description of a typical case at Camp Lee reveals a perfect similarity with the descriptions given in 1889. The prominent features were sudden onset; headache; pain in the back and throughout the body; intense prostration and weakness; signs of conjunctivitis, coryza, sore throat and bronchitis that varied in intensity; scanty nasal and bronchial discharge; fever, and leukopenia. Nosebleed was not uncommon. The conjunctivae were sometimes very red. The throat was usually not markedly inflamed. There were a few cases with barking cough. The most striking symptom was weakness. The conjunctivitis, the bronchial signs and the leukopenia made a case resemble measles—without the eruption. These patients usually recovered in from three to five days, unless pulmonary complications developed.

The object of this study was to determine, if possible, by cultural methods, the bacterial agents operating in these cases. For this purpose, smears and cultures of the nose and throat, in the early cases, were examined; blood cultures were made in the cases of pneumonia; the sputums were injected into white mice, and finally, cultures were made at necropsy.

METHODS

1. In studying the secretions from nose and throat, the culture medium used was blood agar made by adding 5 per cent. human blood to meat infusion agar that was neutral or nearly so, in reaction, phenolphthalein being used as the indicator. Cultures were made by streaking blood agar plates with the cotton swabs that were used in taking the nose and throat cultures, further distribution of the streaks being effected with a platinum loop. Smears on glass slides were made at the same time and stained with Gram and Hiss capsule stains.

It may be noted that although it is now known that the best medium for the cultivation of the Pfeiffer bacillus is agar to which blood has been added while the agar was hot (about 90 C.), the reports so far issued are based on results obtained with the use of plain blood agar. Accordingly, it may be said that the results herein reported are perfectly comparable with the results of others.

In searching for colonies of Pfeiffer bacilli on blood agar plates, it was found that often two or three days were necessary for development of the colonies. At first, owing to the great amount of material to be examined, this time was allowed accidentally as a

*From the Walter Reed General Hospital.

1. Robertson, G. M., and Elkins, F. A.: Brit. M. J. **1**: 228, 1890.
2. Strumpell, A.: München. med. Wchnschr. **37**: 90, 1890.
3. Duflocq: Rev. de méd. p. 85, 1890.

result of delay; later, all cultures were purposely kept for at least three days before being discarded.

2. The common method used in making blood cultures was by adding 5 c.c. of blood to each of two flasks of infusion broth; but in about twenty instances plates were poured also, in which 1 and 2 c.c. of blood and 12 c.c. of melted infusion agar were used.

3. Sputums were thus examined: Smears were made on slides and stained by gram and capsule stains. Washed portions were streaked on blood agar plates, and were injected intraperitoneally into white mice, and the latter, after death, were examined in the usual way for pneumococci and cultures of the exudate made on blood agar and smears of the exudate examined microscopically.

4. For examining specimens at necropsy, blood agar plates were used, except in the case of body fluids, which were put into plain broth, as well.

RESULTS

1. *Nose and Throat Smears and Cultures.*—This portion of the study was made entirely at Camp Lee, at a time when the epidemic was at its height and typical cases were daily entering the hospital in great numbers.

A. Smears: It was considered very important to examine direct smears from the nose and throat, since it seemed logical to expect to find the Pfeiffer bacillus in large numbers in these discharges if such were the cause of the disease. Forty-nine patients in one ward were studied. This number included about ten who had already developed pneumonia. The same swab that had been used in making cultures was rubbed on a glass slide. The smear was stained by Gram and capsule stains and an examination made to determine the character of bacteria present. Of these forty-nine cases, thirteen showed minute gram-negative bacilli which resembled the Pfeiffer bacillus.

B. Cultures: Of the forty-nine patients whose nasal and pharyngeal secretions were studied by direct smear, there were two who yielded cultures of Pfeiffer bacilli. Attempts to transplant these cultures to blood agar resulted in failure of growth. Besides these patients, seventy-four early cases were examined, sixteen of which were examined on admission to the hospital, and fifty-eight in regimental infirmaries. Of this group of seventy-four cases, three gave cultures of Pfeiffer bacilli.

Of 123 throat cultures, therefore, Pfeiffer bacilli were found five times. That this number is too small is indicated by the fact that minute gram-negative bacilli were found in direct smear in 26.5 per cent. of the forty-nine cases examined. There is no doubt that the use of blood agar plates is ineffective in detecting cultures of Pfeiffer bacilli in all cases in which they occur.

2. *Blood Cultures.*—Except in the few instances in which pneumococci were isolated, no positive cultures were obtained. This result is therefore of negative value. One hundred and thirty-six cultures were made in the manner described, with positive pneumococcus cultures in five instances.

3. *Sputum Examinations.*—Sputums were examined from sixty-five patients by the methods described above. Pfeiffer bacilli were seen in the smears of peritoneal exudate and obtained in cultures therefrom in eighteen instances, or 27.6 per cent. Other bacteria accompanied these. Of the pneumococci, Type I occurred five times; Type II, twice; Atypical II, six times; Type III, once, and Type IV, thirty-two times.

4. *Smears and Cultures of Necropsies.*—The results obtained at Camp Lee are considered separately from those at Camp Dix, because the course pursued was somewhat different. The same kind of culture medium was used at the two places, but at Camp Dix, the trachea was examined in all cases, and portions of the lungs were injected into white mice. As stated before, the situation at the two camps was different in that the necropsies at Camp Lee were performed on persons who had died in the beginning or middle of the epidemic, while at Camp Dix, the epidemic had passed, although there were many cases of pneumonia in the hospital, and the quarantine had not been abolished. Most of the necropsies were performed by Dr. MacCallum. His descriptions appear elsewhere.

A. Smears: Forty-four necropsies were studied at Camp Lee. Particular attention was paid to the examination of direct smears from the lungs in these cases, since this point was emphasized by Pfeiffer. However, the lungs did not present the features characterized by Pfeiffer as typical of infection by the Pfeiffer bacillus. In his cases, purulent bronchitis and purulent bronchopneumonia were the typical lesions, and smears of the pus from such sources revealed usually great numbers of tiny gram-negative bacilli in the leukocytes.

The most striking feature of the smears of lung tissue from the necropsies at Camp Lee was the small number of pus cells in the majority of instances, although in most of the cases the patients were ill at least a week. In most instances the smears showed great numbers of red blood cells and enormous numbers of pneumococci. The latter could easily be distinguished by their shapes and capsules. Furthermore, the bacteria seen in greatest number in the smear were correspondingly prominent in the cultures. In other words, the evidence revealed by the smear was an accurate index to the result of the culture. There were three cases in which Pfeiffer bacilli appeared in the smears and cultures. These cases differed from the others in having very few bacteria in the smears.

There were also nine cases in which hemolytic streptococci were present in the culture, in all but two of which very few bacteria appeared in the smears.

B. Cultures: Of the forty-four cases under consideration, three yielded cultures of the Pfeiffer bacillus; seven of hemolytic streptococci, alone; two of hemolytic streptococci with pneumococci; twenty-eight of Pneumococcus IV, alone; two of Pneumococcus IV with hemolytic streptococci; one of Pneumococcus I, and one of pneumococcus (untyped). Two cases yielded a number of kinds of bacteria the identity of which was not determined.

These cultures were taken from the lungs, heart blood, spleen and from the exudate from the pericardial and pleural cavities, if such exudation occurred. Besides the bacteria referred to, there were frequently colonies of staphylococci, gram-negative diplococci, probably of the *M. cartarrhalis* variety, and coarse colonies of small gram-negative bacilli resembling Friedländer bacilli.

The number of times that pneumococci occurred in smears and cultures, almost to the exclusion of other bacteria, left no doubt concerning the pathogenic activity of these organisms; but since they are very commonly present in the mouth, no association with the disease "influenza" was suggested.

CASES AT CAMP DIX

There were ten necropsies. In general, the number of kinds of bacteria was greater than at Camp Lee. Cultures were made from the trachea in all cases; from the bronchi in six, and from the accessory sinuses in two cases in which these cavities were involved; from the lungs in all cases; and portions of lung tissue were ground and injected intraperitoneally into white mice. Smears were made from all these sources. The cultures of the trachea were made by snipping small pieces of the mucosa and rubbing these on blood agar.

Three cases stood out from all the others. In these the smears from the trachea showed large numbers of pus cells, and large numbers of minute gram-negative bacilli. The bronchi and lungs displayed the appearances described by Pfeiffer. In the cultures from these cases the predominating organism was the Pfeiffer bacillus. In one case, no other bacteria appeared in the cultures from the bronchi and lungs; in the other two, staphylococci were also present. It was striking that all the mice inoculated with lung tissue in these cases survived. No other cases yielded Pfeiffer bacilli in the cultures of the lungs, although five others showed these bacilli in cultures from the trachea or bronchi. In three cases Pneumococcus IV occurred in the lungs and heart blood, and in two of these, in the pericardial fluid and abscess of the rectus muscle as well. Hemolytic streptococci occurred in the lungs in two cases, and in two cases there were mucoid colonies of small gram-negative bacilli which resembled Friedländer bacilli and which grew in company with Type IV pneumococci. One case gave a rich culture of *M. catarrhalis* together with untyped pneumococci, from the lungs. In one case, Pneumococcus III occurred in the lungs, heart blood, pleural and pericardial fluids.

These results do not lead to a definite conclusion regarding the cause of the disease. In the three cases in which Pfeiffer bacilli were present in large numbers, a new feature was added to the appearances of the bronci and lungs, namely, the large amount of purulent exudate in the bronchi and bronchioles. Since all the bacteria found in these cases—including the Pfeiffer bacillus—are present in normal throats in a fairly large number of cases, stronger evidence is needed before ascribing to any of them the causation of influenza.

COMMENT

These results suggest that influenza is a disease caused by some as yet undiscovered agent, which produces inflammation of the entire respiratory tract, and effects a very profound lowering of resistance, which is perhaps expressed by the constant and striking leukopenia. Lack of reaction is the most noticeable clinical feature. Under these circumstances, invasion follows by the various bacteria that are capable of becoming pathogenic, although harmless in the normal mouth.

The prominence that the Pfeiffer bacillus has enjoyed with regard to influenza makes it timely to discuss the status of this bacillus. In 1889 many investigators studied influenza. Clinical descriptions were accurate and complete; but it is difficult to find a clear description of the lungs, and bacteriologic methods were insufficient to detect the organism later described by Pfeiffer as the cause of the disease. But the features emphasized by Pfeiffer, namely, purulent bronchitis and bronchopneumonia, were not mentioned by the early writers as characteristic of the disease. Strumpell[2] refers to two forms of lesion in the lungs: a diffuse lobular catarrhal pneumonia almost always in the lower lobes; and diffuse purulent bronchopneumonia. The first type of lesion was present in the majority of cases. During the epidemic, various bacteria were found. Ribbert[4] found hemolytic streptococci most often; Marmorek[5] encountered pneumococci; in more searching studies, Weichselbaum[6] found pneumococci to be the most frequent invaders. Similar results were obtained by Kirchner[7] and Babes,[8] while Levi[9] found pneumococci with streptococci and staphylococci. The inference drawn by all these investigators was that influenza merely prepared the way for the secondary invasion by the bacteria that they described. Two years after the epidemic, Pfeiffer[10] studied a number of cases of purulent bronchitis and purulent bronchopneumonia that were called "influenza." In the bronchial secretion from these cases, he was able to observe and cultivate minute gram-negative bacilli that he had seen in the sputums from cases during the previous epidemic of influenza. Since he showed that they could not be cultivated by the methods used by the earlier workers, it was held as probable that these bacilli were the agents in the epidemic of 1889. He found that the bacilli would not grow on any medium without the addition of blood. His descriptions of the sputum and of the lungs are very definite. He characterized the sputum as being yellow-green, thick and sticky, and frequently very copious. In the lungs he found bronchopneumonic nodules, in the center of which the cut bronchiole yielded pus, identical with the material in the sputum, and composed of pus cells embedded in mucus in which great numbers of the bacilli could be found. He argued that these bacilli occurred only in the disease he was studying, and therefore he named it the influenza bacillus. Since then, all conditions in which the Pfeiffer bacillus has been found have been called "influenzal." Weichselbaum[11] studied five such cases of purulent bronchopneumonia and found the Pfeiffer bacillus in all cases. Grassberger[12] obtained similar results.

French investigators did not accept the results of Pfeiffer. They argued that since this bacillus was found in conditions other than influenza, it could not be the cause of this disease. This view is well presented by Rosenthal.[13] Indeed, many investigators began finding the Pfeiffer bacillus in a variety of diseases, obviously not associated with the epidemic. Wynekoop[14] described three cases of conjunctivitis that gave pure cultures of Pfeiffer bacilli. Süsswein[15] recovered this organism in ten out of twenty-one cases of measles. Leiner[16] studied eleven cases of diphtheria complicated by purulent bronchitis, and all gave cultures of the same bacillus. Auerbach[17] found the Pfeiffer bacillus

4. Ribbert, G.: Deutsch. med. Wchnschr. **16**: 61, 1890.
5. Marmorek, A.: Wien. klin. Wchnschr. **3**: 143, 1890.
6. Weichselbaum, A.: Wien. klin. Wchnschr. **3**: 104, 1890.
7. Kirchner, M.: Ztschr. f. Hyg. **9**: 528, 1890.
8. Babes, V.: Zentralbl. f. Bakteriol. u. Parasitenk. **7**: 233, 1890.
9. Levi: Berl. klin. Wchnschr. **27**: 143, 1890.
10. Pfeiffer, R.: Deutsch. med. Wchnschr. **27**: 28, 1892; ibid. **27**: 465, 1892; Ztschr. f. Hyg. **13**: 357, 1893.
11. Weichselbaum, A.: Wien. klin. Wchnschr., **32**: 459, 1892.
12. Grassberger: Ztschr. f. Hyg. **25**: 453, 1897.
13. Rosenthal: Arch. d. med. **1**: 1281, 1905.
14. Wynekoop, F. E.: A Further Study of the Influenza Bacillus, J. A. M. A. **40**: 574 (Feb. 28) 1903.
15. Süsswein: Wien. klin. Wchnschr. **14**: 1149, 1901.
16. Leiner: Wien. klin. Wchnschr. **14**: 1001, 1901.
17. Auerbach: Ztschr. f. Hyg. **47**: 259, 1904.

a common inhabitant of the tonsils and tracheal secretion in cases of diphtheria, scarlatina, measles and sore throat. Wollstein[18] studied a large number of cases of respiratory infections in infants, and found the Pfeiffer bacillus in sixteen out of fifty-three cases of bronchopneumonia; in eleven of forty-five cases of bronchitis; in eight of twenty-six cases of measles; in eight of twenty-four cases of tuberculosis, and in three of seven cases of empyema. The method used was to plant coughed-up mucus on blood agar plates. Davis[19] found Pfeiffer bacilli in sixty-one of sixty-eight cases of pertussis, and with great frequency in measles, chickenpox and bronchitis, as well as in two of twenty normal throats. In a very exhaustive clinical and bacteriologic study of 186 cases of respiratory infection, occurring between 1902 and 1904, Lord[20] found Pfeiffer bacilli in overwhelming numbers in 25 per cent. by cultural methods. In Camp McClellan last winter there occurred two cases of bronchopneumonia, presenting at necropsy appearances identical with those described by Pfeiffer, in which Pfeiffer bacilli were recovered from the lungs in almost pure culture; and at Fort Sam Houston in February and March, 1918, during the epidemic of streptococcus pneumonia following measles, these bacilli were present with considerable frequency, though they were disregarded as an etiologic factor in the pneumonia under study.

The foregoing indicates that the Pfeiffer bacillus is at certain times, at least, definitely pathogenic. It is associated, most typically, with purulent inflammation of the bronchi and bronchioles. Its appearance in such a variety of conditions primarily caused by other agents robs it of that individuality which it should possess to be the producer of such unique epidemics. If it can be shown in the future that this bacillus occurs with frequency in normal throats, then it can no longer be suspected of even being related to the cause of influenza. In this regard, the report of the pneumonia commission[21] at Camp Pike, written long before influenza appeared in this country, is of value. Sputums from 132 normal individuals were studied by injecting the sputums into white mice. Pfeiffer bacilli were recovered in about 35 per cent. of the cases.

On the other hand, if these bacilli are merely secondary invaders, the frequency with which they occur in the cases of influenza reported by others suggests that these bacteria are very common in normal throats. But the evidence at hand seems insufficient to warrant the statement that the Pfeiffer bacillus is the cause of influenza.

Two points must be settled: First, the question of identifying and classifying these bacilli must be investigated; and second, the exact frequency of their occurrence in normal throats must be ascertained.

CONCLUSIONS

1. Epidemic influenza is a disease of unknown origin.

2. Various bacteria, commonly found in normal throats, are encountered in the cultures from influenza patients.

3. The experience of many investigators indicates that the Pfeiffer bacillus may be pathogenic and cause a form of purulent bronchitis and bronchopneumonia.

4. The Pfeiffer bacillus occurs with striking frequency in the throats of patients with measles, pertussis, diphtheria and scarlatina, especially when these conditions are complicated by the form of bronchitis or bronchopneumonia mentioned.

5. The Pfeiffer bacillus occurs with frequency in normal throats, in times when no epidemic of influenza exists.

18. Wollstein, M.: J. Exper. Med. **7**: 681, 1906.
19. Davis, D. J.: Bacteriology of the Respiratory Tract, J. A. M. A. **48**: 1563 (May 11) 1907.
20. Lord, F. T.: Boston M. and S. J. **152**: 537, 1905.
21. Report of Pneumonia Commission, Camp Pike, to the Surgeon-General of the Army, 1918.

PATHOLOGY OF THE PNEUMONIA FOLLOWING INFLUENZA

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Contributions to the study of the pneumonia following influenza in the recent epidemic are still desirable because of the difference of opinion as to its nature and causes that has been evidenced by numerous published papers. All have agreed as to the uniform character of the disease influenza wherever it has appeared in its swing across the continent, but conflicting views have been presented as to its etiology and as to the relation of various bacteria discovered in the respiratory tract, especially in cases of pneumonia, to the original disease and to the pneumonia. The dispute is concerned more particularly with the part played by the *Bacillus influenzae* of Pfeiffer, which some authors have found so regularly present as to lead them to consider it the cause not only of the pneumonia but also of the original epidemic disease influenza. Indeed, it was launched by Pfeiffer as the cause of influenza. Investigators in other localities have failed to find this organism, and this has been explained by those more successful as being the result of technical incompetence.

The present study was made by a commission consisting of Major R. A. Kinsella and myself, sent by the Surgeon-General of the United States Army, first to Camp Lee in Virginia and later to Camp Dix in New Jersey. Twenty necropsies were performed at Camp Lee when the epidemic was nearing its height, and twelve at Camp Dix at a time when the influenza was practically over but many cases of pneumonia were still in the hospital. Between these visits and afterward, seventeen necropsies were performed at the Johns Hopkins Hospital on patients who died there in the early part of the epidemic of influenza.

It has been stated that the influenza bacillus may be present in the upper respiratory tract, larynx and bronchi when it is not to be obtained from the substance of the lung. On this account, cultures and smears are made from bronchial pus, from the mucosa of the trachea, larynx, etc. This precaution was not observed in the Camp Lee cases, although cultures were made from the accessory nasal sinuses whenever possible; but it was carried out at Camp Dix and later at the Johns Hopkins Hospital. It was suggested that this might account for our inability to find the influenza bacillus in all the cases at Camp Lee; but the later study of these cases has proved this to be unfounded. A combination of Goodpasture's and Weigert's stain[1] permits a very satisfactory survey of

1. MacCallum, W. G.: A Stain for Influenza Bacilli in Tissues, J. A. M. A. **72**: 193 (Jan. 18) 1919.

gram-negative and gram-positive bacteria in the tissues. The organisms are brilliantly stained, the gram-negative red, the gram-positive blue, black or purple, so that it is easy to recognize the presence of influenza bacilli even when a few are mixed with great numbers of gram-positive bacteria. This stain showed that influenza bacilli, when they occurred in the bronchi at all, penetrate into the smaller bronchioles and could hardly be missed in a culture taken from the lung unless the medium employed for the culture was unsuited to their growth. The morphology of the influenza bacillus when clearly seen in the tissues or in smears is very characteristic, and their discovery in this way was nearly always confirmed by reference to the records of the cultures. Indeed, the morphologic recognition of the predominant organisms in the tissues seemed surprisingly accurate when compared later with the results of the cultures.

The accompanying table gives the predominant organism in each case, as decided by consideration of smears, cultures and sections usually with the aid of mouse inoculations. The influenza bacillus is recorded in the table whenever found even in small numbers or

RESULTS OF BACTERIOLOGIC EXAMINATIONS*

Camp Lee		Johns Hopkins Hospital		Camp Dix	
Case No.	Bacteria Found	Case No.	Bacteria Found	Case No.	Bacteria Found
211	St, B I	5706	S H	80	B I, St
212	Pn I	5712	Pn IV	81	B I
213	Gas bacillus	5713	Pn IV, St	82	Pn, B I
214	B I, Pn	5714	Pn IV, St	83	Pn, B I
215	Pn, B I?	5720	S H	84	Pn IV, B I
216	Pn IV, B I	5724	St, Pn	85	Pn IV, B I?
217	Pn	5725	Pn	86	B I
218	Pn IV, B I?	5726	Pn	87	Pn IV, B I?
219	S H	5728	Pn IV	88	Pn III, B I
220	Pn IV	5733	Pn, St	89	B I, S H
221	Pn IV	5736	Pn, St	90	B I, Tb, Pn
222	Pn IV			91	B I, Pn
223	Pn IV	5753	Pn		
224	Pn IV	5763	Pn IV		
225	Pn IV	5765	Pn		
226	Pn, S H, St	5766	Mixture		
227	Pn IV	5769	Pn, mixture		
228	Pn IV				
229	Pn IV				
230	Pn IV, B I?				

* St indicates staphylococcus; B I, Bacillus influenzae; Pn I, pneumococcus Type I; S H, Streptococcus hemolyticus; Tb, tubercle bacillus; Mixture, masses of bacteria of all kinds.

in the trachea or nasal sinuses alone. When it was the predominant organism it is put first.

Some doubt may be admitted as to the nature of these bacilli in certain cases, and Colonel Nichols has pointed out the occurrence of members of the Friedländer group. In Cases 85 and 87 it was thought that the bacilli resembled the Friedländer bacillus in culture.

From the table it is seen that at Camp Lee most of the cases showed Pneumococcus Type IV without any influenza bacilli. This conclusion is not reached from the mere failure of cultures but from the examination of smears from the lung and stained sections from lung, bronchi and trachea, often including also the larynx and nasal sinuses. No considerable number of influenza bacilli could be overlooked, and it has been observed repeatedly that they are not made to disappear by even an overwhelming growth of other bacteria. They were definitely found in three cases, and there were in three other cases a few gram-negative bacilli which might be thought to be influenza bacilli. At the Johns Hopkins Hospital similar methods revealed no influenza bacilli whatever. At Camp Dix, on the contrary, influenza bacilli were found in every case.

From these results it seems necessary to draw one of two conclusions: In certain regions or in certain communities the influenza bacillus may be so prevalent as a relatively harmless inhabitant of the throat that when some epidemic disease, such as influenza, lowers the resistance of many persons, it becomes the natural secondary invader capable of producing pneumonia. This might be regarded as the endemic occurrence of a potential cause of pneumonia.

On the other hand, it has been shown that a single carrier of the hemolytic streptococcus, when introduced into a hospital ward full of patients with measles, may be the source of an epidemic of streptococcus pneumonia. It seems quite probable that secondary infection with the influenza bacillus with the production of pneumonia may in the same way have a local epidemic character.

No satisfactory evidence has been brought forward to show that the epidemic disease influenza is a bacterial infection. It is evidently a general or systemic infection not especially affecting the respiratory tract and analogous in many respects, as Bloomfield has pointed out, to the well known acute exanthematic diseases. It produces an extreme depression of the general resistance of the individual to the invasion of bacteria, as is shown in one respect by the characteristic leukopenia, which may persist in spite of the development of pneumonia. Under these circumstances, bacteria that are present in the throat or are introduced from without readily invade the tissues of the whole respiratory tract and give rise to pneumonia. Because of the lack of resistance, they multiply until they are present in such enormous numbers as are never seen under ordinary conditions. This must be regarded as a secondary infection. The secondary infection apparently determines the anatomic type of the pneumonia, but there may be other successive infections with different organisms, so that it often becomes difficult to say which is the secondary and which the tertiary or quaternary infection. It seems possible that one or more of these organisms may be present without producing any recognizable lesion, while a later invader causes pneumonia, or that when one organism has produced its characteristic pneumonia, others may grow beside it without altering the lesion. On the other hand, a final invader may completely mask the original pneumonia by producing a widespread necrosis.

The influence of the predisposing disease, influenza, is such as to permit the extremely rapid growth of the organisms and minimize the reaction of the tissues. Any attempt to recognize the nature of the infecting organisms on the basis of our knowledge of the specific anatomic effects that they produce in ordinary times must be made with this in view.

It is perhaps questionable whether we have as yet enough carefully studied cases of pneumonia produced by unmixed infections with each of the bacteria concerned, on the basis of predisposing influenza, to allow us to decide as to the precise anatomic effect that is characteristic of each. Thus it is probably impossible to distinguish a Type I pneumococcus pneumonia from one produced by pneumococcus Type II. It is difficult to say whether *Staphylococcus aureus* produces, under these circumstances, a pneumonia that is distinct from these, although many cases have been studied and it is possible that some criterion will be found that will aid in making this distinction. Those produced by the hemolytic streptococcus are probably recognizable as such, and it appears that when alone

or as the predominant organism the influenza bacillus of Pfeiffer produces an interstitial bronchopneumonia that is definitely and easily distinguished from all the others. The difficulty in making these distinctions may be due in part to the fact that mixed infections are the rule.

At the Johns Hopkins Hospital and at Camp Lee we observed patients in an early stage of the epidemic, evidently those of great susceptibility, who succumbed quickly to pneumonia. At Camp Dix the epidemic that had raged with high mortality was practically over, and deaths were occurring among those who had survived somewhat longer and were beginning to present evidences of late extensions of the secondary infection in the form of pleurisy with effusion, endocarditis, scattered infarcts, etc. It seems that the performance of a series of necropsies in one place throughout the whole course of an epidemic might result in this way in revealing all the successive stages of the disease.

TYPES OF PNEUMONIA

In persons who have just passed through an attack of influenza, the following types of pneumonia may be recognized, although it is evident that the distinctions may be rendered indefinite by simultaneous infection with other organisms: Pneumonia caused by (1) the pneumococcus; (2) the staphylococcus; (3) the streptococcus, and (4) *B. influenzae* of Pfeiffer.

1. *Pneumococcal Pneumonia.*—When the pneumococcus occurs in pure culture, and also in those cases in which it is the predominant organism even in the presence of influenza bacilli and other organisms, a characteristic form of pneumonia is produced under the conditions of lowered resistance. In most instances there is very little fluid in the pleural cavity, and the surface, instead of being covered with a shaggy exudate of fibrin, is only slightly dulled. There are brick-red, paintlike patches here and there, and sometimes small, elevated, grayish yellow flecks which become confluent in patches. The pleura and interlobular septums and remaining framework of the lung appear to be unchanged. The bronchi are not especially conspicuous. Their walls are not thickened, and while they may sometimes contain in the later stages fibrinous molds, they are usually empty or partly filled with a thin, brownish or blood-stained, frothy fluid. Their mucosa shows no marked alteration from normal. The blood vessels are normal.

On external inspection of the lung, it is frequently possible to recognize sharply outlined consolidated lobules alternating with air-containing and atelectatic lobules. The lobular character of the consolidation is in these cases well marked, although it tends to lose its definiteness through the confluence of adjacent areas. No general statement can be made as to the location of the consolidation, but it usually affects the posterior and lower part of each lobe, and the posterior part of the lower lobe is especially frequently involved.

The cut surface of the lung shows in the more acute cases a peculiar lobular or confluent consolidation which corresponds well with what is commonly written of the stage of engorgement in the description of lobar pneumonia. Bronchioles, blood vessels and the framework of the lung are not appreciably altered. The substance of the lung is firm, elastic, and not rigid as in later stages; but it pits on pressure, exuding a great quantity of blood or brownish blood-stained fluid. The surface is smooth, moist, slightly elevated above the surrounding tissue, grayish red or brownish red, and coarsely spongy. Distinct but minute depressions can be seen everywhere, filled with a translucent, gelatinous, red fluid. These are too large to be the cavities of alveoli, and are separated by what appear to be thick walls of homogeneous tissue. They are in fact the widened ductuli alveolares filled with fluid and separated by areas of alveoli filled with a somewhat firmer exudate. No visible or palpable plugs of exudate project from any part of the surface, and there is nothing of the roughness that this produces in later stages. Nevertheless, the consolidated tissue is easily distinguished from that surrounding it, because it has lost the satiny texture of the normal lung, which may be pulled this way and that, like silk gauze. In the area of pneumonia, despite its smoothness and moist, rather translucent surface, the distended form of the meshes is maintained.

Microscopically these areas show an extraordinary dilatation of the ductuli alveolares, which are filled with clear fluid containing only a few leukocytes and a delicate coagulum. They are lined with a curious hyaline substance which begins in a layer overlying the cylindric epithelium in the terminal part of the bronchiole and often runs over the orifices of the atriums or enters them and extends toward the air sacs. It does not give the reactions of fibrin. The alveoli contain an exudate of fluid with a few leukocytes and mononuclear cells, often overshadowed by great numbers of well preserved red corpuscles. These cells are held together by the most delicate, filmy network of fibrin. Great numbers of pneumococci are scattered throughout the exudate. The alveolar walls maintain their normal appearance.

Later stages in the pneumonia show within these areas patches of rough, gray, consolidated tissue, from which definite plugs of exudate project. Every transitional stage may be found, up to the most advanced lobar consolidation, with dense gray hepatization.

2. *Staphylococcal Pneumonia.*—We encountered no cases in which the staphylococcus was present alone and, indeed, none in which it occurred in very great numbers. No definite statement may be ventured as yet, therefore, regarding the type of pneumonia produced. In one case in which the staphylococcus appeared to be the predominant organism, the lesion was indistinguishable from that just described for the pneumococcus.

3. *Streptococcal Pneumonia.*—When *Streptococcus hemolyticus* occurs alone in these cases, as in Cases 219 and 5720, the lesion produced is practically identical with that described as "lobular pneumonia" in certain cases of the previous epidemic. There is not necessarily extensive pleural effusion, but the pleura may contain a small amount of blood-stained fluid. The interlobular septums are edematous, and the bronchial walls are slightly thickened. The area of consolidation is indefinitely outlined, and in places it is deep red or almost black, evidently as the result of laking of blood.

Microscopically the bronchi and alveoli are packed with leukocytes, blood and fibrin, and loaded with tangled masses of streptococci. Much of the blood is laked and appears in the form of shadows. Much of it, again, is coalescent into a beaded network of pink-staining, hyaline material. The capillaries in the alveolar walls are plugged in many places with hyaline

fibrinous thrombi, and a similar hyaline material is found in the walls of the larger blood vessels. The bronchial walls are infiltrated with leukocytes, and the epithelium is lifted up or destroyed. Whole areas of the lung, although retaining their form, are entirely necrotic, the alveolar cavities being packed with almost solid masses of streptococci. Lymphatics are everywhere distended with exudate containing enormous numbers of streptococci. In none of these cases was there enough resistance to give time for the development of an interstitial bronchopneumonia.

4. *Pneumonia Produced by Bacillus Influenzae of Pfeiffer.*—In two cases at Camp Dix the influenza bacillus was present in pure culture, and in others it was the predominant organism. Tissues from another case in which the influenza bacillus occurred alone were sent me from Camp Jackson. It is easy to recognize the type of pneumonia produced by this organism, since it is fundamentally different from the others.

There is no abundant pleural exudate, although the pleural surface may be covered with fibrin or with old adhesions. The bronchi exude a thick, yellow pus, and the bronchial glands are moderately enlarged.

On section, the lung is found to be in large part air-containing, but it is studded throughout with palpable shotlike nodules or with somewhat larger patches of firm consistency. The cut surface of these nodules is smooth, and they are grayish yellow. They are seen to be peribronchial, so that when they stand alone the center is occupied by the lumen of a bronchiole. The remaining lung substance is air-containing or indurated and grayish.

Microscopically it is found that the bronchi are filled with an exudate of leukocytes, among which numerous influenza bacilli are lying, sometimes in clumps and scattered freely, but most often enclosed in phagocytic cells. The wall of the bronchus is greatly thickened by infiltration of mononuclear cells with a few leukocytes, and by the new formation of connective tissue cells. The alveolar walls for a considerable distance about this are similarly thickened, infiltrated and indurated. The alveoli contain an exudate which is usually rich in leukocytes, but which is often predominantly composed of desquamated epithelial cells and dense fibrin. In this exudate it is rarely possible to find influenza bacilli. Organization is advancing rapidly, and in many instances it has completely replaced the fibrinous exudate with fibrous tissue over which epithelial cells have grown.

The lymphatic channels in the bronchial walls and the widened interlobular septums are inconspicuous, and none are found distended with exudate. There is no intense infection of the pleura or great outpouring of exudate. These two facts, together with the relatively inconspicuous part played by the polymorphonuclear leukocytes in the alveolar exudate, and in the exudate infiltrating the walls of the bronchi and alveoli, are all that distinguish this pulmonary change from the interstitial bronchopneumonia caused by the hemolytic streptococcus, as described in previous papers. The sharp contrast between this form and those produced by the pneumococcus and streptococcus is very evident.

In describing the forms of pneumonia caused by the hemolytic streptococcus, it was shown that interstitial bronchopneumonia was produced when the organisms encountered a high resistance, through which the tissues succeeded in barricading themselves against invasion and repressing the multiplication of the bacteria, but that with a lapse in the powers of resistance there might be produced in the same case areas of lobular pneumonia in which an exudate of leukocytes filled the alveoli. In this exudate the streptococci multiplied with great rapidity.

In the case of the influenza bacillus an exactly analogous condition exists. There are cases in which an interstitial bronchopneumonia has developed, with restriction of the bacilli to the bronchial exudate, but in which later, probably with lowering of resistance, other lesions presenting the character of lobular pneumonia have arisen in which the more distant alveoli are packed with leukocytes with abundant influenza bacilli.

In the doubt that for a time assailed me as to whether the interstitial form of bronchopneumonia seen in Texas might after all be due to the influenza bacillus rather than to the predominant streptococcus, I have been much reassured by this finding. Although influenza bacilli were found as accompanying organisms in a few of those cases, there were many in which the typical lesions were produced by the streptococci alone. But now that it appears that streptococci and influenza bacilli may in precisely similar ways be governed, as regards the character of the lesions they produce, by the resistance opposed to them, it seems unnecessary to ascribe one type of lesion to the streptococcus and another to the influenza bacillus.

Various complications that occurred in these cases of pneumonia will be discussed in detail in another paper. They include such things as hyaline degeneration of the rectus abdominis muscles, ulcerative laryngitis and tracheitis, and generalized emphysema.

CONCLUSIONS

1. The epidemic disease influenza resembles in many respects measles and other acute exanthematic diseases. Nothing is definitely known as to its causative agent.

2. It produces great lowering of resistance to bacterial invasion and is therefore often followed by pneumonia caused by the different types of pneumococcus, *Staphylococcus aureus, Streptococcus hemolyticus* or the influenza bacillus of Pfeiffer.

3. In some regions the influenza bacillus is a particularly common secondary invader. In other regions it is insignificant, its place being taken by one of the pneumococci. This may depend on an endemic or epidemic distribution of these organisms as inhabitants of the nasopharynx.

4. The form of pneumonia produced after influenza is greatly modified by the lowering of resistance, which allows huge numbers of bacteria to grow. Nevertheless the types caused by the pneumococcus, streptococcus, and influenza bacillus are to be sharply distinguished. Probably the type caused by the staphylococcus will be shown to have distinctive peculiarities when adequate material has been studied.

Exemia in Shock.—In shocked men there is a concentration of the blood in the capillaries, indicated by a marked difference between the capillary and the venous blood counts. This difference may amount to as much as 2,500,000 corpuscles per cubic millimeter in favor of the capillary count. The evidence from blood counting indicates that the "lost blood" of shock (the exemia) is to a considerable degree to be found in the capillary bed.—*Review of War Surgery and Medicine.*

THE MIGRATORY APPENDIX

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There are certain types of tumors in the abdomen, usually cystic in character, that become attached by adhesions at a point distant from their origin and finally become detached entirely from their original locality, their nutrition being maintained through blood vessels in the new adhesions. These tumors are known as migratory tumors. The peculiarity of these growths suggested to my mind the caption of this article. It is not difficult to understand that the appendix might be subjected to a similar condition, and, being separated from the cecum, might maintain an entirely separate life through new blood vessels formed in abundant adhesions. A condition of this kind is well illustrated by the following case:

REPORT OF CASE

Miss F. M., aged 23, had suffered from a gonorrheal infection for which I had treated her for nine months. In August, 1917, she had recovered sufficiently so that treatments were discontinued. She reappeared in August, 1918, complaining of pain in the right iliac region. This pain became so acute that she was confined to bed. There was some nausea, elevation of temperature and increase of pulse rate. The patient complained of tenderness in the right iliac region on pressure. There was much difficulty in getting a bowel movement. On account of the previous history of tubal disease it was a question whether the trouble was pyosalpinx or appendicitis. I decided to make an exploratory examination, which I did.

I operated on her, Sept. 10, 1918, at Rockford City Hospital. The incision was made through the right rectus muscle, so that it might be enlarged in either direction to make free access to the appendix or tube as might be necessary. On opening the abdomen I found a considerable mass of omentum adherent in the right iliac fossa. This I ligated *en masse* and removed it entirely. The intestines in this region were kinked and firmly adherent to each other, thus accounting for the partial intestinal obstruction. The intestines were covered with a yellow plastic exudate. Sterilized gauze was used in separating the adhesions. The search was made at the cecum for the appendix, but I was unable to locate it. The right fallopian tube was distorted and adherent. Pressure on the tube forced a few drops of pus out of the fimbriated extremely. The tube was ligated and removed. At this stage of the operation the distal end of the appendix was observed protruding about half an inch through a mass of adhesion in the right iliac fossa. The appendix was dissected out from these adhesions as thoroughly as possible. The toilet of the peritoneum was finished by pouring about 4 ounces of ether into the pelvis and right iliac fossa, so that any infection of this locality through the tube might be counteracted and the peritoneum closed in layers.

No doubt a continual leakage of pus from the right tube produced the intestinal adhesions, and the appendix, which had become entirely separated from the cecum, was kept alive through new blood vessels formed in the many adhesions about this organ.

The patient made a good recovery without complications, save a slight infection in one of the skin stitches.

COMMENT

It is difficult to tell whether the appendix or the tube was primarily the offending organ in this case. It is interesting to speculate as to what pathologic condition would have followed if such an appendix had been left entirely to nature. It is my own opinion that the appendix and the adhesions would ultimately have been absorbed without causing any trouble, but it is plainly to be seen that a tube with a patulous extremity periodically leaking pus into the peritoneum might have caused serious complications. This condition of the appendix may account for some of the cases reported in which no appendix was found.

BRONCHOPNEUMONIA DUE TO HEMOLYTIC STREPTOCOCCI FOLLOWING INFLUENZA *

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The bacteriology and pathology of bronchopneumonia during the last two months (December and January) have become quite different, at the Chelsea Naval Hospital, from that found during the preceding three months, including the most severe period of the first local outbreak of influenza. In the earlier period, cultures of Pfeiffer's bacillus were obtained from the lungs in 86 per cent. of cases postmortem, the organism often being found in pure culture, pneumococci in 50 per cent., and hemolytic streptococci in 13 per cent.; while during the last two months, cultures of hemolytic streptococci have been obtained from the lungs in 100 per cent. of those examined at necropsy, and in the majority of instances pure cultures were obtained. Pfeiffer's bacillus was demonstrated in only two cases of a total of sixteen, and these two were examined the first week of December.

This marked variation in the type of invading organism in bronchopneumonia is of particular interest since it represents the experience of a single station during a relatively short period of time; and we are now familiar with wide differences in bacteriologic observations from various sections of the country since the epidemic of influenza began.

From the twenty-six cases studied during the height of the epidemic in the early fall, we became more or less familiar with a type of pneumonia which was fairly typical of that series, and were able to recognize many modifications obviously due to secondary invasion by pathogenic organisms. An acute bronchiolitis characterized by the presence within the bronchioles of a dry exudate consisting of a few leukocytes, polymorphonuclear and mononuclear, mucus and fibrin, usually with partial or complete necrosis of the mucous membrane, and the presence of a characteristic irregular hyaline membrane on the infundibular and alveolar walls, were regarded as typical early lesions. Bronchopneumonia following this was fulminating in type and consisted in a widespread toxic injury to alveolar tissues, so that they became filled with fluid exudate, fibrin, and hemorrhage with extensive injury to alveolar walls and capillaries. From a study of these cases we stated that "the pulmonary injury and reaction being so acute and often widespread, and the fact that in certain very early cases bacteria of any kind are so scarce or not found at all, make us feel, notwithstanding the demonstration of influenza bacilli in pure culture in the lungs in all but one instance, that at this stage organisms are as yet comparatively few within alveoli, and their primary injury is due to a very potent toxic substance elaborated in and disseminated through larger air passages." Following

* From the U. S. Naval Hospital.

this initial injury, pathogenic bacteria readily invaded the pulmonary tissue, producing injury and reaction more or less typical for the organism concerned. In striking contrast to the group of cases that constitutes the material for the present report, hemolytic streptococci at that time played a relatively small rôle as a secondary invader, complicating only five, or 13 per cent., of the cases. In three of these, multiple abscesses were present in the lungs, and in the other two streptococci and influenza bacilli were associated in the production of widespread bronchiectatic abscesses and ulcerative bronchitis.

The present report is based on the postmortem examination of sixteen cases, constituting all the cases of bronchopneumonia examined at necropsy during the past two months. Eleven of the patients

CASES OF BRONCHOPNEUMONIA WITH PATHOLOGIC DIAGNOSIS

Case No.	Range of Leukocyte Counts	Pathologic Diagnosis	Bacteriology of Lungs	Clinical Diagnosis on Admission
1	6,000-12,800	Bronchopneumonia; no empyema	Influenza bacilli; hemolytic streptococci; pneumococcus Type IV	Influenza
2	15,000-18,000	Bronchopneumonia; empyema (bilateral)	Hemolytic streptococci; nonhemolytic streptococci; influenza bacilli	Influenza; bronchopneumonia
3	3,200	Bronchopneumonia; no empyema	Hemolytic streptococci	Influenza
4	13,000-48,000	Empyema (bilateral); pericarditis; slight pneumonia	Hemolytic streptococci	Bronchopneumonia
5	25,000	Bronchopneumonia; peritonitis; empyema	Hemolytic streptococci	Bronchopneumonia
6	12,000	Bronchopneumonia; empyema (bilateral)	Hemolytic streptococci	Bronchopneumonia; empyema
7	4,700-3,400	Bronchopneumonia; empyema (bilateral)	Hemolytic streptococci	Influenza
8	6,900	Bronchopneumonia; empyema (left)	Hemolytic streptococci	Influenza; bronchopneumonia
9	4,000-15,000	Bronchopneumonia; empyema (bilateral); peritonitis	Hemolytic streptococci	Influenza
10	8,000-10,200	Bronchopneumonia; empyema (bilateral)	Hemolytic streptococci	Empyema; bronchopneumonia
11	7,000	Bronchopneumonia; empyema (left)	Hemolytic streptococci	Influenza
12	16,800	Bronchopneumonia; empyema (left)	Hemolytic streptococci	Empyema; bronchopneumonia
13	5,000-8,200	Bronchopneumonia; no empyema	Hemolytic streptococci	Influenza
14	9,000-19,200	Bronchopneumonia	Hemolytic streptococci	Influenza
15	3,000-6,000	Bronchopneumonia	Hemolytic streptococci	Influenza
16	5,000	Bronchopneumonia	Hemolytic streptococci	Influenza

developed empyema, and the pleural exudate yielded pure cultures of hemolytic streptococci.

The accompanying table presents these cases. Although some of the patients entered the hospital with well-developed bronchopneumonia, in several instances the clinical diagnosis of influenza or post-influenzal pneumonia was made.

In five cases the empyema was bilateral, in four on the left, and once on the right side. In each instance bronchopneumonia was bilateral. One case showed an extensive streptococcal pneumonia in each lung with no pleural exudate, and is of interest because numerous fibrous adhesions were present over the lungs, suggesting the possibility of an increased resistance to the infection because of previous inflammation.

The lungs were moist and congested, often atelectatic where pleural exudate was voluminous. The areas of consolidation were grayish purple, and cut surfaces exuded a fairly thick, purplish pus. In the early stages of pleural inflammation the exudate is serous, containing relatively few cells and organisms; later it becomes thick pus containing enormous numbers of streptococci. In four cases the infection was very prominent in the lymphatics and interlobular tissue of the lungs. The lobules in areas of considerable size were found outlined by wide (from 3 to 4 mm.) yellow bands. These bands followed the veins and bronchi to the hilum. The lymphatics of the pleura may also be filled with streptococci. Abscesses have occasionally been found. Microscopically the alveoli are filled with polymorphonuclear leukocytes and usually enormous numbers of streptococci, with little or no fibrin. Often there is widespread necrosis. In no instance have we observed the appearances of interstitial bronchopneumonia, described by MacCallum, which occurs so frequently as a sequel to measles. The distribution of the pneumonia is usually lobular and rather massive. In cases of short duration it may be lobar in distribution and involve the greater part of the lung tissue. Nor have we recognized the toxic lesions of early influenzal pneumonia as seen during the first weeks of the epidemic, and I regard all the cases in this report as instances of primary streptococcus pneumonia frequently following an attack of influenza.

The question naturally arises whether some of these cases were not primarily streptococcus infections without influenza. Eleven of the sixteen had attacks typical of influenza which terminated in pneumonia; the diagnoses of the other five were questionable as to an attack of influenza. In view of the experiences last year at various stations of epidemic streptococcal infections of the respiratory tract, it does not seem unlikely that similar outbreaks will occur or are occurring this winter, and with the impressions of influenza so recently in mind there will probably be considerable confusion of the two diseases, especially as there do not appear to be any very certain criteria which distinguish them, particularly when bronchopneumonia is present. Symptoms of onset, leukocyte count and the fever chart may be quite similar, although apparently there is usually more complaint of sore throat with streptococcal infections.

At this hospital, during the period covered by the present report, hemolytic streptococci have been exceedingly prevalent in various forms of inflammation, and this unusual prevalence explains in part their high incidence as a cause of bronchopneumonia attacking persons whose resistance is lowered by influenza.

The absence of the pathologic evidences of a preceding or accompanying toxic inflammation of the lungs, which in the early part of the epidemic of influenza appeared fairly characteristic of the pulmonary lesions of this disease per se, makes me regard the cases of the present series as examples of primary streptococcal pneumonia.

Bronchopneumonia following influenza has at present absolutely no etiologic or pathologic definition, for the type of organism concerned and the type of lesion in the lungs are decidedly variable at different times even at the same station. It is essential to bear this fact in mind in any consideration of the pneumonic complications of influenza, especially from the standpoint of prospective treatment.

APPENDICITIS AT CAMP LOGAN AS A SEQUEL TO INFLUENZA AND PNEUMONIA

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It is well known that the occurrence of several cases of acute appendicitis in rapid succession in a small community, typically in a boarding school or similar institution, is commonly in association with an epidemic affecting the respiratory tract. Most commonly we find streptococcic sore throat as the precedent disease, but not infrequently an epidemic of severe colds. Several such outbreaks have come under our observation. The studies of Rosenow are of special interest in this connection.

The increased number of cases of acute appendicitis requiring operation at Camp Logan since the recent respiratory epidemic has therefore attracted our attention. It is only fair to say at the start that the management of the medical service has been in the same hands since the opening of the hospital. The two chiefs of surgery, Major J. H. Blackburn and Major F. G. Dyas, have worked in closest cooperation with the chief of medicine, always under the general and close supervision of the commanding officer, Lieut.-Col. J. M. Willis, M. C. Thus absolute assurance may be given that the type of case recommended for operation has not varied during the entire period.

As showing the character of the epidemic, we may state that the admissions for influenza from Sept. 13 to Dec. 1, 1918, when it had ceased, numbered 4,126, and for pneumonia and bronchopneumonia 531 and thirty-six, respectively.

A careful estimate of the average number of men in camp from Sept. 15, 1917, the date of opening of the hospital, until Sept. 13, 1918, the date of the influenza outbreak, is 24,000, although the maximum number had reached 36,600. If we compute the average incidence of acute appendicitis requiring operation for the year, from Sept. 15, 1917, to Sept. 13, 1918, we find it to be 10.4 per thousand per year. The total number of cases in which operation was performed was 250, as given us by Lieut. F. H. Crail of the department of surgery.

During the period from Sept. 13, 1918, to Dec. 31, 1918, ninety-two patients were operated on, the average incidence per thousand per year being 30.66. The great reduction in the number of troops in camp meanwhile should be noted, the average being only 10,000 men. From September 13 to September 30 there were fifteen cases; in October, three cases; in November, thirty-nine cases, and in December, thirty-five cases. The falling off in October is wholly inexplicable, as the epidemic was at its height. The seventy-four cases for November and December would present a rate of 44.4 per thousand per year. No case demanded operation during the first seven days of January, 1919, and only two in the first twelve days. It is to be observed that the great number of operations came after the epidemic had passed the high point late in October, and the December quota, thirty-five cases, came after the epidemic had disappeared. We have collated the number of cases coming to operation with reference to previous attacks of appendicitis and to the occurrence of either influenza or pneumonia.

In the ninety-two cases, twenty-five patients had had previous well defined attacks of appendicitis; twenty had had influenza during the present epidemic, and four had had pneumonia. We might well consider the latter under the influenza heading, as presumably every patient with pneumonia in this epidemic had influenza first; five had had a "bad cold" during the epidemic—presumably mild influenza. Thus twenty-nine of the ninety-two patients had had influenza, pneumonia or a notably bad cold since Sept. 13, 1918. This number would not at all account for the great increase in the number of cases of operative appendicitis, and they constitute almost a trivial percentage of the total number affected by the epidemic.

An interesting feature of the respiratory epidemic was the great number of cases admitted to the hospital with the diagnosis of acute appendicitis in which, after a few hours' observation, we changed the diagnosis to either influenza or pneumonia, and in which the further course confirmed our opinion that no notable disease existed in the abdomen. In the influenza cases we assume that the symptoms leading to a diagnosis of appendicitis arose from the participation in the acute infectious process of the lymphoid tissues of the appendix, as is often noted in tonsillitis, measles and similar acute diseases.

In pneumonia the pain and rigidity were, at times, apparently of the same type, but were frequently due to the reflection into the abdomen of the pain of the diaphragmatic pleural involvement accompanying a pneumonia of the right lower lobe. It should be definitely understood that no such cases were even seriously considered for operation, although about fifty patients were received whose provisional diagnosis was wrongly given as appendicitis.

Of the ninety-two patients operated on the diagnosis of the pathologist was acute catarrhal appendicitis in fifty-four cases; acute suppurative appendicitis in fifteen and chronic catarrhal appendicitis with subacute exacerbation in twenty-three cases. The chief of surgery, Major F. G. Dyas, was the operator in twenty-nine of the cases; Lieut. F. H. Crail in fourteen; Capt. Arthur Love in twelve; Capt. E. R. Dumke in eleven, and others in a few scattered cases.

The findings that led us to recommend operation were identical with those on which we have depended in civil life in the absence of epidemic disease. There were generally noted abdominal pain, vomiting, moderate elevation of temperature and pulse rate, tenderness and rigidity in the lower right quadrant, and an increase in the white count, commonly with a relative polymorphonuclear increase. The blood findings were of more than usual value in view of the normal leukopenia of influenza. Due weight was, of course, given to the history of previous attacks.

Every case was examined with special care as to the presence of pneumonia or other acute respiratory disease, and the routine examination of urine was made. In no case in which we operated did we fail to find a pathologic justification for the operation according to the best judgment of the pathologist, the surgeon and the representative of the medical department. We have several times observed in former years, as many physicians have reported, a full fledged acute lobar pneumonia, generally in the right lower lobe, in cases

in which we were told that the appendix removed the day before had been practically normal. We had no such occurrence in this series. It is necessary to mention this specifically, since the possibility of such error would almost certainly occur to many clinicians. No patient with acute respiratory symptoms was subjected to operation even though there might be present tenderness and rigidity in the abdomen, without several days of observation, and only three cases were sent to the operating room until after the subsidence of all such symptoms.

Our laboratory report is incomplete, since, during the epidemic, the typing of pneumococci and the hemolytic streptococcus work could not wait. Major M. C. Stone, M. C., chief of the laboratory service, reports that in the cultures from the nonsuppurative appendixes the hemolytic streptococcus was occasionally found, but most of the cultures were sterile. The suppurative cases showed the pneumococcus, the colon bacillus and the streptococcus, but without evidence of any predominating type of infection. We greatly regret that the exigencies of the epidemic prevented a full study of the relationship between the respiratory infection and that of the appendix.

There is certainly no ground in our findings for closely connecting the attacks of appendicitis, in any direct bacteriologic way, with the epidemic, as one may connect empyema with definite types of pneumonia.

A satisfactory recovery occurred in every case but one. The fatal result was noted in a patient who had been five weeks in the cardiac ward early in 1918 with widely dilated heart and systolic murmur at the apex. His compensation remained so poor that he had been excused from even the morning exercises, which, when taken, exhausted him for the day. The appendix was a long retrocecal one, largely subperitoneal and acutely inflamed, but not such as to lead us to have any special anxiety as to the outcome. Exhausting suppuration occurred, and he died at the end of the first week.

The data that we present are insufficient to justify any exact conclusions as to the influence of the epidemic on the morbidity from appendicitis. Nevertheless, we believe there is firm basis for the opinion that some close relationship exists between the two affections. It is extremely suggestive that on the first day of the influenza attack so many patients showed such definite signs in the region of the appendix as to lead to a diagnosis that proved to be incorrect, assuming our opinion on this point to have been well founded. If this symptomatology was dependent, as we believe, on involvement of the lymphoid tissues of the appendix, we may readily conceive that in many other instances a definite inflammation resulted which eventually demanded operation.

Perhaps we are not far wrong in assuming that the epidemic, characterized as it was by a phenomenal activity on the part of many different pathogenic organisms, gave special opportunity for the development of inflammation of the appendix; but whether by reduction of the general bodily resistance, by exciting a new attack in a chronically affected organ, by its action on the lymphoid tissues, or by an infection through the blood stream or otherwise, does not appear. Certainly some cause lay behind the increase from a percentage of 10.4 for our first year, to a rate of 44.4 for November and December, 1918, in the incidence of appendicitis requiring operation.

We wish rather to place these observations on record as a minute part of the history of the great epidemic than to attempt to draw any extensive inferences from such slender data.

POSTMORTEM CESAREAN SECTION FOLLOWING AN INFLUENZAL BRONCHOPNEUMONIA

SUCCESSFUL DELIVERY OF A LIVING CHILD

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SAN FRANCISCO

The conditions most frequently calling for a postmortem cesarean section are the sudden death of the mother from traumatism, hemorrhage or eclampsia. In the case in hand, death was the result of a bronchopneumonia following influenza.

At first glance it would appear that a number of abdominal sections might have been done during the recent pandemic of influenza; but as I look back over the records of the San Francisco Hospital, in which, during the past four months, we have handled 108 cases of influenza complicated with pregnancy, I find that in only one case was it thought advisable to do a cesarean section. Thus we find the percentage rather small.

REPORT OF CASE

Nov. 9, 1918, Mrs. L. A., aged 24, was admitted to the hospital, in her third labor. Both her last children are living. She was a woman of about 150 pounds, having done the usual housework. On admission to the ward the patient was in a moribund state, markedly cyanotic and profoundly toxic. As was later learned, she had been sick for six days prior to admission to the hospital. A hurried examination revealed a moderate bilateral basal bronchopneumonia. The fundus of the uterus was found to be 3 cm. above the level of the umbilicus. The fetal heart was readily audible and not greatly increased in rate.

As no consent was to be obtained for the operation, it was determined to wait for the patient's natural decease, and then proceed, if possible, to save the child.

From 3:30 p. m. I sat with two interns at the bedside, until at 6:50 p. m. she was pronounced dead. The fetal heart sounds were becoming less audible, and for the last fifteen minutes were so feeble that they could not be heard with a stethoscope. As soon as it was certain that death had taken place, the section was performed. An incision was made in the midline, extending 1 inch above the umbilicus, and downward to the symphysis, and going through the uterus as hurriedly as possible. The child was found to be toxic and feeble, but with very little effort at resuscitation the child began to cry. The child was not quite full term, weighing 3 pounds 15 ounces. The child lived, but died when 25 days old. The cause of death was croupous pneumonia with pleurisy. Microscopic sections of the lungs show a filling of many alveoli with fibrin, and foci of round cell infiltration with areas of necrosis. The areas were most marked around the smaller bronchioles. There was also an inflammatory deposit on the pleurae. The time elapsing after the mother's death, before the delivery of the child, was in this case about one and a half minutes.

The Buckeye in the Left Hand "Pants" Pocket.—Kansas has an illiteracy rate of 2.7 per cent., and yet there are people not in this class, wearing asafetida bags around their necks, or carrying a lump of camphor in their pockets, or contaminating the atmosphere with garlic or onion breaths as a preventive against influenza! Will the janitor please open the windows wider?—*Bulletin*, Kansas State Board of Health.

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SATURDAY, MARCH 8, 1919

FURTHER FACTS REGARDING ANTISCORBUTICS

Scurvy, a disease which once represented a menace of serious moment to large numbers of persons at certain seasons and under certain conditions, when "fresh" foods were not available in sufficient variety or abundance, has returned into prominence in recent years. Experience has shown that while the heating of milk for infant feeding may remove undesirable bacterial dangers from this essential food, it is liable at the same time to destroy certain undefined properties of the diet, in the absence of which scorbutic symptoms arise. Furthermore, under the conditions of food supply enforced in some of the theaters of war, the medical officers have also found themselves confronted with scurvy, both among the fighting units and among the inhabitants of devastated areas.

Quite aside from all theories as to the etiology of the disease, experience has demonstrated effective methods for the cure or the prevention of scurvy. In this country orange juice has acquired a growing popularity as an antiscorbutic supplement to the diet of bottle-fed infants. The difficulties in maintaining a supply of oranges at a price within the reach of all classes of persons concerned have been aggravated by the interference with normal transportation during the period of the war. This has, in fact, occasioned much concern among pediatricians in various centers. The possibility of desiccating or preserving the juice in some way at the sources of supply in order to insure a more dependable distribution of orange juice has encountered the obstacle of uncertainty raised by recent studies on the instability of antiscorbutic properties when vegetables exhibiting them are dried.[1] Thus the desiccation of cabbage seems to deprive it of antiscorbutic potency unless the drying is carried out at low temperatures and with special precautions. Chick and Rhodes,[2] of the Lister Institute for Preventive Medicine in London, have recently found, in searching for possible substitutes for the highly efficient orange juice, that fresh grapes are of little value as antiscorbutics; of the raw vegetable juices examined, raw swede juice proved to be far the most potent, approximating in value to orange juice; the raw juice of carrots was found to be much inferior, and that of beet roots practically negligible in value, so far as acceptable dosage is concerned.

From a practical standpoint the discovery of this potency of swede juice seems to be important because it promises to afford a valuable, inexpensive source of antiscorbutic material. According to the English investigators, the value of swede juice is not markedly inferior to that of fresh orange juice, so that it may be regarded as a satisfactory substitute. Its value approximates ten times that of the raw carrot and more than ten times that of raw beet root juice. Chick and Rhodes add that swede juice has been adopted in some of the English infant welfare centers, and there does not appear to be any drawback to its use in infant feeding. Curiously enough, the swede belongs to the natural order *Cruciferae*, which also includes the cabbage, perhaps the most potent of all antiscorbutic vegetables investigated.

In the case of adults living under conditions in which fresh foods are not available, a belief in the antiscorbutic potency of the juice of the West Indian lime has been cherished for decades. Arctic explorers, ships starting on long voyages without access to land, and expeditions away from sources of appropriate food supplies have been accustomed to be equipped with lime juice preserved in various ways; and there are records to show that vigorous steps were sometimes taken to enforce the actual ingestion of the dosage as ordered. The efficacy of this preventive therapy has been far from universal; and an explanation seems to be afforded by recent investigations, also conducted at the Lister Institute, by Chick[3] and her co-workers, to whom we are already indebted for valuable contributions to the prevention of scurvy. Preserved lime juice was found useless for the prevention of scurvy by the methods employed. The fresh limes have some potency; but it has now been shown that, volume for volume, their juice is only about one-fourth as effective as is lemon juice. Curiously enough, a historical study of the reported cures of scurvy with lime juice shows that the agent employed in several authenticated instances was in reality the juice of the lemon. There are instances of severe scorbutic outbreaks despite the liberal use of lime juice. This demonstrated virtue of the lemon, a fruit so widely employed in the household in modern

1. Scurvy and Antiscorbutics, editorial, J. A. M. A. **71**: 2000 (Dec. 14) 1918.

2. Chick, Harriette, and Rhodes, Mabel: An Investigation of the Antiscorbutic Value of the Raw Juices of Root Vegetables with a View to Their Adoption as an Adjunct to the Dietary of Infants, Lancet **2**: 774 (Dec. 7) 1918.

3. Chick, Harriette; Hume, E. Margaret; Skelton, Ruth F., and Smith, Alice H.: The Relative Content of Antiscorbutic Principle in Limes and Lemons, Together with Some New Facts and Some Old Observations Concerning the Value of "Lime Juice" in the Prevention of Scurvy, Lancet **2**: 735 (Nov. 30) 1918.

life, affords an added illustration of the unique value of many items of diet, like certain fruits and green vegetables, for which we pay a high price despite the fact that they give no equivalent return in calories. Instinctively, perhaps, we have come to include in our dietaries articles of food which have a high physiologic value that cannot be measured in the current terms of food units.

SACCHARIN—AFTER THE WAR

The restrictions of trade and the shortage of many important supplies incident to the war have encouraged the production of substitutes in the domain of foods and drugs as well as in other fields of commerce. This has been true in far greater degree in the overseas countries than in America, where the deprivations and interferences have not been so protracted. It has frequently been remarked by those who have familiarized themselves with conditions in Germany during the latter years of the war that the entire population of the Central Empires seemed to be eating, drinking and wearing substitutes most of the time. Some of these will doubtless establish themselves as useful contributions to our mode of living—products of the ingenuity of necessity.

The war has taught us that it is no great hardship to do without certain drugs that were once regarded as next to indispensable. On the other hand, we must be on our guard lest temporary advantages gained for avowed substitutes in times of stress are allowed to become a reason for foisting on a tolerant public products that have no proper place in the everyday life of peace times.

An illustrative case is afforded by the use of saccharin, which has veritably been a gustatory blessing to hundreds of thousands of persons who were unable to secure sugar, on which they were accustomed to depend for insuring the palatability of certain foods. How large the traffic in saccharin, sanctioned by the governments of the nations affected, has been is indicated by the statement of a single British firm which itself furnished 1,785 million tablets[1] to meet the emergency. Having satisfied a need, the manufacturers appear not to be content, like munitions and other war industries, to turn their talents and plants to better uses, but suggest that the great commercial sacrifices made in setting their works into operation to produce saccharin should be rewarded, as it seems, by the permission to continue the traffic under post-war conditions.

Thus a new plea is added to the old arguments of those who wish to foist saccharin on the public. Formerly it was alleged that the chief objectors were the sugar cultivators and manufacturers. "It is true," admits a large producer of saccharin, "that saccharin is without nutritive value, and so it is not recommended as a substitute for sugar in feeding children." He contends, however, that "the highest medical authorities" are fully agreed that it is perfectly innocuous and has no effect whatever on metabolism. It is urged to have a special value in adiposity, and we are assured by this lay expert that many quite healthy persons receiving sufficient nourishment from other foods, and conscious that they are benefited by abstinence from sugar, will henceforth take advantage of the sweetening properties of saccharin.

The referee board to which the saccharin problem was referred in this country several years ago has by no means given a clean bill of health to the chemical. It has merely fixed a lower limit of apparent innocuousness and warned against promiscuously large dosage. There are still plenty of persons in the world who are not children and who do not suffer from either adiposity or diabetes. They need to be protected from the danger, not to mention the deception, of a substitute for sugar which is in no sense a true food. We doubt whether the time has arrived when any considerable portion of the world's population needs to be protected against harm from a wholesome food by the use of a chemical which has no food value and may be definitely harmful.

1. According to the annual report of Boots Cash Chemists, Ltd., in the London Observer, Jan. 19, 1919.

THE DANGERS OF INHALED DUST

In a widely circulated popular book, entitled "Dust and Its Dangers," which was published about thirty years ago, emphasis was placed on the distribution of bacteria by that form of "matter out of place" which is commonly designated as dust. This was quite appropriate at a time when the widespread distribution and previously unsuspected significance of the micro-organisms were being brought to the notice of the world at large. Since that early period in the development of modern bacteriology, preventive medicine has begun to direct attention to quite different aspects of the dust menace. The recognition of the possible pathologic effect produced by the inhalation of minute, nonliving particles of matter is by no means new. Clinical observations on the subject have long been on record; and the question as to whether certain pigmentations of the lung are due to extraneous particles or to pigmented tissue products has been debated since the days of Virchow. Nevertheless it has been due to the demands of industrial hygiene, perhaps more than any other stimulus, that careful investigation has been renewed in this field of inquiry.

It is known from industrial experience that there are distinctions between dusts of different origins, so far as their effects after inhalation are concerned. Dust rich in silica, such as is encountered in the gold mines of the Transvaal and in many potteries, is admittedly dangerous. On the other hand, in comparison with flint dust, it is believed that coal dust

and shale dust are relatively harmless. An investigation conducted by Mavrogordato[1] for the English Medical Research Committee under the national insurance act has thrown some light on the distinctions just referred to. Specifically formulated, the question may be thus presented: Since it may be regarded as established that all forms of dust enter the lungs, why is it that some, such as coal, are relatively harmless, while others, such as flint, are deadly?

The answer appears to lie in the fact that some dusts are eliminated much more readily than others: at any rate, when the exposure is a moderate one. After intense dusting, all the dusts appear to produce much the same effects, both immediate and remote. But under the more usual industrial conditions, it seems, from Mavrogordato's investigations, that dusts which make mischief are dusts that accumulate. Coal and shale, for example, are taken up by cells which are quickly shed and consequently do not set up processes which block lymphatics. These cells frequently break down, and masses of dust are to be seen on the surface of the alveolar walls. Plugs of mucus, dust cells and dust find their way out of the lungs through the bronchi, though some dust may leave indirectly by means of the lymphatics. In other words, the more readily eliminated dusts produce a marked initial reaction with much shedding of epithelium. The flint dust and crystalline silica, by way of contrast, are taken up by cells that tend to remain in situ. They form plaques which persist, and the shedding of the epithelium is far less conspicuous. Cell proliferation is much more marked, and fibrosis may ensue. Permanent lesions are liable to be produced.

Since many persons are engaged in essential employments that compel them to pass a large portion of their time in dusty atmospheres, the question of ameliorating the conditions and averting the dangers is a serious one. Even if dust rarely kills, aside from producing considerable fibrosis of the lung it may predispose the individual to pulmonary tuberculosis. Dilution of the dust seems, by itself, to offer little promise of help in the case of the more dangerous sorts; for the dose must be extremely small in the case of such particles as flue dust and silica, if accumulation is to be avoided in the lung. There is somewhat greater prospect of relief in the observation that dusts which produce an initial reaction of epithelium shedding tend to carry the more inert forms out with them. Thus some admixture of coal dust may act as a protector when the more deadly dusts are inhaled; in fact, such chance combinations may explain the apparent immunity experienced by certain workers with flint and silica dusts. Coal dust has its special industrial risks, since it is responsible for explosions in the coal mines. This danger can be reduced to a minimum by mixing coal with inert dusts. Hence Mavrogordato remarks that the ideal would be to stop colliery explosions by adding flint and to stop phthisis by adding coal, thus holding a tenace over providence.

1. Mavrogordato, A.: Experiments on the Effects of Dust Inhalations, J. Hyg. **17**: 439, 1918.

Current Comment

DIETETIC VALUE OF NUTS

The war has taught us to appreciate many things which were by no means new but which had remained in partial oblivion because of the characteristic inertia of man toward a change in his traditional habits. In illustration may be cited the neglect of nuts as articles of food. Although many persons eat liberally of nuts and the vegetarians have long regarded them as a sort of staple in the diet, we venture to believe that most Americans at least are wont to class them as relishes or accessories. The suggestion to use nuts more liberally often meets the objection that they are not well digested and are likely to give rise to alimentary discomfort. Actual experiment has demonstrated, however, that the charge of inherent indigestibility is not borne out,[1] provided the nuts are consumed under proper conditions. The reported distress attending their use is probably due to inadequate mastication, so that larger masses of an impervious vegetable product are ingested; or they are eaten after an already abundant meal. Nuts are in fact highly concentrated foods, consisting essentially of proteins and fats. Chestnuts alone are rich in carbohydrate, in the form of starch, and are poor in fats. It should be borne in mind, by way of comparison, that the 100-calory portion of most nuts is very small; for example, from twelve to fifteen almonds furnish such an equivalent of food fuel. Remembering that proteins are no longer to be judged solely by their quantity, since a quality factor has been demonstrated by current methods of investigation by direct feeding to be of nutritive significance likewise, it may be asked whether the nut proteins take a reputable rank in this respect. It is probably fair to say that proteins from plant sources do not receive the dietary respect that is accorded to those of animal origin. The proteins of meat, eggs and milk are put into a superior category by a sort of popular consent, when they are contrasted with those furnished by the cereals, legumes and other green vegetables. Some surprise was created, therefore, by Hoobler's[2] experimental evidence of the high value of nut proteins in relation to human milk proteins. A similarly favorable report has just been rendered by Morgan and Heinz[3] from observations they have made on man at the University of California. The protein of almond meal was noted to have a "biologic value" superior to that of wheat gluten, itself a well utilized cereal protein source. Such carefully determined facts must be weighed against popu-

1. The Digestibility of Nut Oils, editorial, J. A. M. A. **71**: 467 (Aug. 10) 1918; The Utilization of Nuts as Food, ibid. **71**: 974 (Sept. 21) 1918.

2. Hoobler, B. R.: The Effect of Human Milk Production on Diets Containing Various Forms and Quantities of Protein, Am. J. Dis. Child. **14**: 105 (Aug.) 1917.

3. Morgan, Agnes F., and Heinz, Alice M.: Biological Values of Wheat and Almond Nitrogen, J. Biol. Chem. **37**: 215, 1919.

lar prejudices in considering the availability of nuts in any regimen. Even though they may not be demanded under the conditions of ordinary diet, there are not a few occasions when carbohydrate-free foods of the protein-fat type would form a welcome addition to the curtailed list that some disease or idiosyncrasy may have occasioned.

RESEARCHES AND REMEDIES IN RURAL SANITATION

In 1914 the U. S. Public Health Service began a special study, intensive in character and extensive in scope, of rural sanitation. Of this study, which is still in progress, Dr. L. L. Lumsden, now an assistant surgeon-general of the service, has been from the start in direct and responsible charge, and his report on three years' work in thirteen states and fifteen counties, ranging from Maryland to Kansas, has just appeared as Public Health Bulletin 94. In spite of the excessive urbanization of the last century, America is still largely rural. Moreover, city and country are more closely bound together than some realize, since, as Dr. Lumsden truly says, mosquitoes and flies regardlessly cross state lines, county lines, city lines, town lines and line fences between farms, while "the average large American city obtains its milk, vegetables and fruits from as many as five or six different states," and "insanitary conditions at farm homes in one state are often responsible for contamination of milk or other foods, causing extensive outbreaks of disease in cities, towns, villages or country neighborhoods in other states." City conditions likewise react on rural populations, through the rural resident homeward bound, the city dweller seeking refreshment in the country, and in many other ways. Hence the obvious importance of rural as well as city sanitation, the sanitary chain being never stronger than its weakest link. One of the worst defects of modern life is its want of leisure, and because of this there is danger that Dr. Lumsden's really remarkable report will fail to be read and studied as it deserves to be. For thoroughness of inquiry, for insight into a primitive state of American sanitation, and for a comprehension of the fundamental sanitary problems of our contemporary civilization, no similar report has been available. The conditions revealed by Dr. Lumsden's researches are perhaps not very different from what might have been anticipated, but it was indispensable to have them solidly established and not merely assumed or accepted. It is, however, the remedies devised, the improvements introduced, and particularly the propaganda found effective that especially excite our interest and admiration. Best of all are the striking results obtained in the direction of health and sanitary improvement and the prospect of their essential permanence. The report is illustrated by numerous and often ingenious charts and diagrams, which adorn Dr. Lumsden's story and point his sanitary tale, carrying the final conviction that, after all, it is simple, old fashioned—yet scientific—cleanness that is the foundation of our modern sanitary superstructure. Physicians should familiarize themselves with the details of this absorbing story of twentieth century sanitary research.

"FIGURES NEVER LIE"

Next to the "patent medicine" exploiters, no class has commercialized the recent epidemic of respiratory disease, or played on the public's fears more skilfully, persistently, and unscrupulously, than the various "drugless healing" sects and cults. Following the classic course, "lies, d—n lies and statistics," the latest move in this advertising campaign is the publication of statistics. These figures purport to show the vast improvement in the treatment by chiropaths, naprapaths, naturopaths, or some other "paths," over that given by scientific medicine, in dealing with the "flu," and its sequelae. Thus we find a newspaper solemnly telling its readers that the "so-called drugless doctors of New York City" have announced that during the recent epidemic they "did not lose a single case." This "announcement" the editorial writer characterizes as "astounding" and draws the "appalling conclusion" that most of the people who have died during the recent epidemic have actually been killed by practitioners of medicine! Several other equally startling deductions are drawn by the same writer from the bait so frankly cast and so voraciously swallowed, hook, line and sinker. Those who accept without question the "statistics" of the "drugless healers" to the effect that "they didn't lose a case," ignore the rather patent reasons why the empiric avoids this unpleasant catastrophe. They forget that many people have gone to such "healers" who never had the disease, self-diagnosed as influenza; they brush aside the fact that those who really had it forsook the quack as soon as they realized their danger and invoked the aid of medicine, and finally they ignore, or possibly do not realize the further fact that, it being illegal for the "drugless healers" to sign death certificates, these gentry make it a routine practice to abandon to the medical profession all cases that have reached a serious stage. All of these actualities obviously invalidate the "statistics," even supposing they were honestly collected. "In all my years of service," said the ancient driver of the four-wheeler, "statistics show that I have never lost a single passenger by drowning!" "Although I have been crossing the Atlantic for thirty years," vouchsafed the captain of the ocean greyhound, "I can prove by incontrovertible statistics that not one of my passengers was ever run over by a taxicab while in my charge." Wonderful are the uses to which statistics can be put!

WHAT IS "PTOMAIN" POISONING?

The term "ptomain" poisoning has become a cloak for ignorance. Jordan[1] says that "ptomain poisoning is a convenient refuge from etiologic uncertainty." In fact, any acute gastro-intestinal attack resulting from a great variety of causes is apt to be called "ptomain" poisoning. Selmi, in 1873, first used the word ptomain (from πτῶμα, a corpse) to include the poisonous products of putrefaction which gave the reaction then looked on as characteristic of vegetable alkaloids. From the time of Selmi, when ptomains

1. Jordan, E. O.: Food Poisoning, University of Chicago Press, 1917.

were regarded as animal alkaloids, our conception of these substances has changed markedly. The last attempt to give precision to the term was by Vaughan,[2] who defined ptomains as intermediate cleavage products of protein decomposition. Rosenau and his associates[3] at Harvard have been searching in vain for the past year and a half for ptomains that might cause gastro-intestinal or other symptoms. Split products of protein putrefaction are readily isolated. Some of these products have physiologic activity, but none of them thus far have been demonstrated to be poisonous when taken by the mouth. The so-called ptomains isolated and described by Selmi, Nencki, Brieger, Schmiedeberg, Faust and Vaughan were usually obtained from putrid organic matter that had decomposed past the point at which it would be used as food. Furthermore, most of these substances were tested by injecting them subcutaneously or intravenously into animals. Many substances are poisonous when thus introduced parenterally, though they may be harmless by the mouth. Again, many of the so-called ptomains isolated and described have since been shown to contain impurities. Chemists are now seldom confident of the purity of protein fractions, even when obtained in crystalline form. The chemical search for split protein products as the cause of "ptomain" poisoning has practically been abandoned. Most of these split products are amins, which are either not poisonous at all, or no more so than their corresponding ammonia salts. The chemical resemblance between muscarin and cholin has directed the work toward the phosphatids, but thus far this line of research has not helped solve the puzzle of "ptomain" poisoning. Chemists avoid the use of the word ptomains, for the reason that it lacks precision. This is a curious instance of the popular use of a technical term that sounds well, but means little. Only clinicians cling to it as a convenient refuge. Ptomain is a term for chemical substances of uncertain origin, unknown nature, and doubtful existence.

2. Vaughan, V. C., and Novy, F. G.: Cellular Toxins, Ed. 4, Philadelphia, Lea Bros. & Co., 1902.
3. Rosenau, M. J.: Lecture, School of Hygiene and Public Health, Johns Hopkins University, Baltimore, Jan. 20, 1919.

Electric Diagnosis of Internal Ulceration.—L. Freund writes to the *Deutsche medizinische Wochenschrift*, **44**:1345 (Dec. 5) 1918, to call attention to the information that is to be derived from the sharp local pain felt when a weak faradic current passes through any excoriation. He utilized it to detect any break in the skin in his hands before operations. He dipped his hand in the fluid of the hand jar of the "four cell electric bath" for arms and legs. The twinge of pain from even a hangnail showed at once the points to be protected with collodion. The method is applicable to the body cavities, stomach, bladder, rectum and vagina. For the stomach, he introduces a fine copper wire inside the stomach tube into the stomach, and passes a roller electrode over the surface of the body outside. The patient first drinks the barium contrast suspension, as roentgen examination usually is done at the same time. This thick suspension prevents any injury from the wire guide in the rubber tube. In sixteen persons thus tested, five complained of sharp pain at one or more points in the anterior wall of the abdomen. One of this group had a laparotomy later, and evidences were found of a healed invagination. The nine who responded negatively to the test were all clinically sound except one man with an atonic sagging stomach.

Medical Mobilization and the War

Personnel of the Medical Corps

For the week ending February 28, the Medical Corps contained 21,545 officers, a decrease from the previous week of 406. The Medical Reserve Corps contained 783 officers. The total number of medical officers discharged since the beginning of the war is 12,037

Severely Wounded

The following medical officers have been reported as having been wounded severely: Eugene Robert Van Meter, Lieut., St. Louis; Harlow R. Connell, Lieut., Roanoke, Va.; Fred Vosburgh, Lieut., Castelton-on-the-Hudson, N. Y.; Frank Petty Hixon, Capt., Pensacola, Fla.; Harold B. Eaton, Lieut., Boston; Harry A. Seigall, Lieut., Hartford, Conn.; Lucius L. Handly, Lieut., Houston, Texas; Guy H. Jacobson, Lieut., Wayne City, Ill.

Weekly Bulletin A. E. F.

Feb. 3, 1919

PROMOTIONS

On Jan. 16, 1919, the chief surgeon forwarded to general headquarters a list of recommendations for promotion, including eighty-five lieutenant-colonels to the grade of colonel, 282 majors to the grade of lieutenant-colonel, 932 captains to the grade of major and 2,457 lieutenants to the grade of captain. The Weekly Bulletin points out that this is a long list because there have been great and unfortunate delays in making promotions in the Medical Department of the A. E. F., and it represents an accumulation to fill long existing vacancies. There will still remain the following vacancies: 241 in the grade of colonel, 293 in the grade of lieutenant-colonel, 1,151 in the grade of major and 1,323 in the grade of captain. In a general discussion the chief surgeon explains the reason for delays in promotion up to this time. Much of the Bulletin is devoted to the endeavor being made to control venereal diseases.

STATISTICS ON DISEASES IN THE A. E. F.

The greatest number of A. E. F. patients in base and camp hospitals and convalescent camps in France and England was in the week ending Nov. 7, 1918, when a total of 190,888 beds were occupied by sick and wounded. Of these beds 39,778 were classed as emergency beds.

On the day the armistice was signed (November 11), there were occupied or available a total of 209,134 normal beds, or beds spaced one per three linear feet of Adrian barracks or equivalent space in procured buildings. In addition, there were available space and equipment for emergency beds for 74,399 more patients, or a total of 283,533 normal and emergency beds.

On this date, there were in operation 153 base hospitals, sixty-six camp hospitals, and twelve convalescent camps.

Between November 11 and December 5, the number of normal beds was increased to 223,257, with an emergency expansion up to 296,835.

Either in hospitals actually operating at the time of signing the armistice or in buildings leased for hospital purposes or provided for in new hospital buildings authorized or under construction, there was an eventual normal bed capacity of 423,722 with an emergency expansion up to 541,000 beds.

On Jan. 23, 1919, there were 97,458 patients in base and camp hospitals and convalescent camps, of whom 18,214 were Class A men awaiting evacuation (actual patients, 79,244). There are also 33,171 patients (14,462 medical and 18,659 surgical) ready to be evacuated.

In the evacuation, mobile and field hospitals of the three armies, there were 9,765 patients at the same time.

TYPHOID AND PARATYPHOID

Cases of typhoid and paratyphoid have been reported in several organizations. In some, carriers have been found, and instructions have been issued to revaccinate all men in every organization in which two or more cases of typhoid or paratyphoid have occurred. For the first time in two months the week of February 3 showed a definite and considerable reduction in the existence of typhoid and paratyphoid.

The rates of the communicable diseases for this season of the year are considered to be creditably low. The annual rate per thousand, venereal disease, for the whole A. E. F. is 36.9, certainly a creditable record.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

NOTE.—In the following list, L. signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel; Col., colonel, and B. G., brigadier-general.

ALABAMA

Belle Ellen—Nettles, R. (L.)
Huntsville—Westmoreland, H. D. (C.)
Livingston—Davidson, M. T. (L.)
Scottsboro—Boyd, H. (C.)
Selma—Harper, W. W. (C.)
Troy—Weedon, H. M. (M.)

ARIZONA

Douglas—Wright, F. T. (M.)

ARKANSAS

Hot Springs—Tarkington, G. E. (L.)
Searcy—Tapscott, S. T., Jr. (L.)

CALIFORNIA

Bakersfield — Bumgarner, G. M. (C.)
Blythe—Lowe, F. A. (L.)
Corning—Snyder, A. D. (M.)
Exeter—McLean, A. D. (C.)
Fresno—Tobin, P. A. (L.)
Los Angeles—Allen, C. S. (L.)
Humfreville, D. L. (C.)
Moore, E. C. (M.)
Rogers, A. R. (C.)
Sellew, P. K. (L.)
Oakland — Bartholomew, J. Y. (L.)
Smith, A. M. (C.)
Pasadena—Lockwood, C. D. (M.)
Petaluma—Anderson, J. G. (L.)
Salinas—Reeves, W. R. (C.)
San Diego — Wegeforth, H. M. (C.)

COLORADO

Colorado Springs—Loomis, P. A. (M.)
Stough, C. F. (M.)
Denver—Cooper, H. S. (L.)
Monument—McConnell, W. (C.)
Pueblo—Hoag, D. E. (C.)
Saleda—Booth, C. O. (L.)

CONNECTICUT

Hartford—Birdsong, J. L. (L.)
Boyce, R. V. (L.)
Stockwell, W. M. (M.)
Pomfret Center—Goodridge, F. G. (C.)
Ridgefield—Lowe, R. W. (C.)
Waterbury—Parker, T. E. (L.)

DISTRICT OF COLUMBIA

Washington—Christie, A. C. (Col.)
Hume, H. (C.)
Laughlin, J. B. (C.)

FLORIDA

Jacksonville—Bodet, R. E. (L.)

GEORGIA

Atlanta—Byrd, E. S. (C.)
Dorsey, R. T. (M.)
Lyle, W. C. (M.)
Muse, L. H. (C.)
Cartersville—Howell, S. M. (L.)
Rome—McCall, J. T. (C.)
Weston—Lunsford, G. G. (L.)

ILLINOIS

Avon—Harrod, R. W. (L.)
Chicago—Butterfield, E. H. (C.)
Dick, G. F. (M.)
Gearin, J. J. (L.)
Jirka, F. J. (L.)
Kelley, J. E. (C.)
Kerr, E. K. (M.)
Kreml, O. A. (M.)
Nyvall, Y. J. (L.)
Walk, F. D. (L.)
West, J. F. (C.)
Zaborktsky, I. (C.)
East St. Louis—McNary, W. F. (C.)
Gillespie—Higgins, J. R. (L.)
Irving—Canaday, R. N. (L.)
McLeansboro—Bozarth, J. A. (L.)
Oswego—Weishew, L. J. (L.)
Penfield—Wehn, C. C. (C.)
Peoria—Hinckle, W. A. (C.)
Rockford—Pearman, A. (L.)
Salem—Logan, H. L. (M.)
Springfield—Bierly, J. R. (L.)
Neal, J. R. (C.)
O'Hara, F. S. (M.)
Spring Valley — Miltenberger, R. E. (L.)
Sterling—Snavely, J. L. (L.)

INDIANA

Bicknell—Staley, T. M. (C.)
Bloomington—Whetsell, L. E. (L.)
Clayton—Jones, R. E. (C.)
Dana—Strong, D. S. (L.)
Indianapolis—Brown, E. A. (C.)
Little, J. W. (C.)
Sluss, J. W. (M.)
Wales, E. D. (M.)
Kokomo—Lung, B. D. (L.)
Logansport—Barcus, C. E. (C.)
New Albany—Winstandley, W. C. (C.)
Owensville—Strickland, K. S. (L.)
Terre Haute—Combs, M. R. (M.)
Vincennes — McCormick, H. D. (L.)

IOWA

Alexander — Rodemeyer, F. H. (L.)
Creston—Macrae, J. G. (C.)
Des Moines—Leir, C. N. O. (C.)
Russell, J. (M.)
Grinnell—Parish, O. F. (L.)
Livermore—Bowes, J. J. (L.)
Malvern—Campbell, M. S. (L.)
Postville—Blessin, O. J. (C.)
Superior—Atkins, G. L. (C.)

KANSAS

Concordia—Haughey, L. E. (C.)
Kansas City—Richmond, T. (C.)
Minneapolis—Cludas, A. L. (C.)
Sabetha—Dillingham, W. R. (C.)
Wichita—Greening, W. P. (C.)

KENTUCKY

Bradford—Comer, B. N. (L.)
Frankfort—Stewart, A. (C.)
Hartford—Pendleton, E. B. (C.)
Lot—Siler, J. E. (L.)
Louisville—Fort, F. T. (M.)
McCoy, S. C. (C.)
Woodard, R. L. (C.)
Robards—Ridley, J. U. (C.)

LOUISIANA

Delhi—May, R. L. (M.)
Donaldsonville—Thibodaux, P. T. (L.)
Jackson—Lea, J. W. (M.)

MAINE

Bangor—Howes, L. M. (C.)
Lewiston—Cummings, E. S. (C.)

MARYLAND

Baltimore—Baer, W. S. (L. C.)

MASSACHUSETTS

Boston—Babcock, H. L. (C.)
Quackenboss, A. (M.)
Thomas, J. J. (M.)
Warren, J. (M.)
Lynn—Metzger, B. (C.)
Salem—Ahearne, C. A., Jr. (C.)
Tewksbury—Peirce, G. A. (C.)
Waltham—Stiles, F. M. (C.)
Worcester—Stapleton, W. P. (L.)
Yoosuf, A. K. (C.)

MICHIGAN

Ann Arbor—Peterson, R. (M.)
Detroit—Safford, H. E. (C.)
Smith, F. H. (C.)
Grand Rapids—Cowell, J. R. (C.)
Greenville—Barr, A. S. (C.)
Henderson—Soule, G. T. (C.)
Ogden Center—Van Dusen, C. A. (L.)
Partello — Southwick, C. R. W. (L.)
Petoskey — Van Leuven, B. H. (L.)
Saginaw—Watson, R. S. (C.)

MINNESOTA

Barnesville — Patterson, C. H. (L.)
Duluth—Linneman, N. L. (C.)
Magney, F. H. (L.)
Mantorville—Adams, R. T. (C.)
Minneapolis—Hufnail, F. E. (C.)
Robertson, H. E. (M.)
Sessions, J. C. (M.)
White, S. M. (M.)
Rochester—Bissell, W. W. (C.)
Judd, E. S. (M.)
Mayo, W. J. (Col.)
O'Leary, P. A. (L.)
St. Paul—Daugherty, E. B. (C.)
McNevin, C. F. (C.)
Rutherford, W. C. (M.)

MISSISSIPPI

Biloxi—Odeneal, E. P. (M.)
Leesburg—Davis, G. C. (L.)
McComb—Otken, C. H. (C.)
Okolona—Wicks, A. F. (C.)
Richton—Gavin, E. M. (L.)
Yazoo City—McCalip, W. D. (C.)

MISSOURI

Broseley—Brandon, W. L. (L.)
Bunker—Simmons, C. C. (C.)
Kansas City — Haworth, D. B. (L.)
Koogler, J. F. (C.)
Kyger, F. B. (L.)
McBride, W. L. (M.)
Olsen, H. H. (L.)
Vernon, W. C. (C.)
La Monte—Walker, W. E. (C.)
Leeper—Owens, R. J. (L.)
Neck City—Hogan, W. G. (L.)
Oregon—Kearney, E. F. (L.)
Pleasant Hill — Scrivener, D. S. (C.)
Springfield—Delzell, W. A. (C.)
St. Joseph—Colley, E. A. (L.)
St. Louis—Margulis, A. A. (L.)
Miller, G. H. (L.)
O'Keefe, J. J. (C.)
Sauer, W. E. (C.)
Seelig, M. G. (L. C.)
Simon, F. C. (C.)
Van Meter, E. R. (L.)

MONTANA

Antelope—Vornholt, M. T. (L.)
Hardin—Drake, J. H. (C.)
Polson—Holmes, J. T. (L.)

NEBRASKA

Byron—Decker, R. F. (L.)
Collegeville—Johnson, H. H. (L.)
Omaha—Lemere, H. B. (C.)
Papillion—Magaret, O. H. (C.)
Rulo—Shepherd, W. (L.)
Sidney—Roche, R. E. (L.)

NEVADA

Reno—St. Clair, R. (C.)

NEW HAMPSHIRE

Alstead—Mousley, B. T. (C.)
Berlin—Marcou, L. B. (L.)
Keene—Holmes, R. W. (M.)
Manchester—Straw, A. G. (M.)

NEW JERSEY

Atlantic City—Salasin, S. L. (C.)
Greystone Park—Collins, L. M. (L.)
Hoboken—Auriemma, M. (L.)
Jersey City—Higgins, G. L. (L.)
Newark—Bien, F. A. (L.)
Coghlan, J. W. (C.)

NEW MEXICO

Clayton—Edmondson, S. M. (C.)
Roswell—Bradley, R. L. (C.)
Springer—Thompson, L. A. (L.)

NEW YORK

Brooklyn—Boley, H. B. (L.)
Mangold, F. J. (L.)
Patrie, H. H. (L.)
Buffalo—Brady, B. E. (C.)
Fairbairn, J. F. (M.)
Hoffman, H. P. (L.)
Prior, L. H. (L.)
Short, J. E. (L.)
Corghan—Von Zierolshofen, P. H. (C.)
Elmira—Christian, F. L. (C.)
Greece—Hillman, W. B. (L.)
Groveland Station—Morris, J. G. (C.)
Kingston—Johnston, F. A. (M.)
New York—Azzari, R. J. (L.)
Boehm, J. B. (L.)
Cussler, E. (M.)
Dunnington, J. H. (L.)
Fried, H. (L.)
Githens, T. S. (C.)
Grattan, J. F. (C.)
Grout, G. H. (C.)
Heyd, C. G. (M.)
Levy, R. J. (L.)
Levy, R. L. (C.)
Lyle, H. H. M. (Col.)
Mandeville, S. E. (L.)
Marshack, J. (L.)
McFarland, A. H. (L.)
McLean, F. C. (M.)
Meyer, A. L. (C.)
Michaelis, H. (L.)
Moriarty, R. W. (L.)
Orgel, S. Z. (L.)
Pascal, H. S. (C.)
Ray, E. T. (C.)
Raynor, M. W. (M.)
Spitzer, S. J. (L.)
Steinfelder, J. J. (L.)
New York—Stillman, R. G. (M.)
Wyckoff, J. H. (M.)
Norwich—Hartigan, W. E. (L.)
Ossining — Schafmeister, J. F. (C.)
Oxford—Hall, B. A. (C.)
Rochester—Bullen, S. S. (L.)
Jackson, E. W. (C.)
Schenectady — McGauley, F. F. (L.)
Sullivan—Eliot, E. (M.)
Syracuse—Groat, W. A. (C.)
Wayne—Wright, A. F. (C.)
Wolcott—Houston, S. W. (L.)

NORTH CAROLINA

Hope Mills—Bradford, B. M. (L.)
Nashville—Winstead, J. A. (C.)
Raleigh—Knox, A. W. (C.)
Rosemary—Beckwith, R. P. (L.)
Sunbury—Brooks, H. E. (L.)
Wilmington—Andes, G. C. (L.)
Winston-Salem — Lockett, E. A. (M.)

NORTH DAKOTA

Fingal—MacDonald, A. C. (L.)

OHIO

Cleveland—Christie, C. D. (C.)
Follansbee, R. G. (L.)
Gauchat, P. G. (L.)
Stotter, A. L. (C.)
Columbus—Dunham, J. D. (M.)
Woods, G. W. (C.)
Delaware—Weller, V. B. (C.)
Kenton—Fox, D. C. (L.)
Lorain—Dager, W. F. (C.)
Steubenville—Maxson, C. W. (C.)
Toromto—Casey, B. L. (L.)
Uhricksville—Beck, H. A. (L.)
Youngstown—Dunn, G. D. (L.)

OKLAHOMA

Albion—Wright, P. E. (L.)
Drumright—Blachley, C. D. (L.)
Enid—Swank, J. R. (L.)
Fairview—Anderson, J. V. (L.)
Haileyville—Gardner, P. (C.)
Henryetta—Bollinger, I. W. (L.)
Muskogee—Stolper, J. H. (C.)
Oklahoma City—Newton, L. A. (L.)
Shawnee—Rice, E. E. (C.)
Wilburton—Munn, J. A. (L.)

OREGON

Grant's Pass—Stricker, F. D. (C.)
Ontario—Prinzing, J. (L.)
Portland—Crockett, E. N. (C.)
Salem—Byrd, P. W. (L.)

PENNSYLVANIA

Berlin—Esken, H. G. (C.)
Claghorn—Curtis, K. D. (L.)
Easton—Updegrove, H. C. (C.)
Etters—Roberts, S. J. (L.)
Greensburg—McKee, C. W. (C.)
Indiana—Nix, W. H. (M.)
Kennett Square—Merryman, J. W. (C.)
McKeesport—Goldberg, S. (L.)
New Florence—Tittle, H. W. (L.)
Peckville—Young, C. L. (L.)
Philadelphia—Boehringer, W. G. (L.)
Cadwalader, W. B. (M.)
Cowan, A. (C.)
Ellinger, J. E. (C.)
Elliott, J. D. (M.)
Jones, L. H. (L. C.)
Levering, J. W. (C.)
Packard, F. R. (M.)
Phillips, H. (M.)
Stellwagen, T. C., Jr. (M.)
Woolridge, J. H. (L.)
Pittsburgh—Day, F. W. (M.)
Pittston—Ransom, H. L. (L.)
Scranton—Shields, M. J. (C.)
Van Vechten, G. J. (C.)
Wormser, B. B. (C.)
Shamokin—Bogar, G. H. M. (L.)
State College—Glenn, G. C. (L.)
Tarentum—Hoch, P. G. L. (L.)
Washington—Dunkle, G. B. (C.)
Wilkes-Barre—Doyle, W. J. (C.)
Woodville—Hill, R. L. (M.)

RHODE ISLAND

Providence—Adams, F. M. (C.)
Appleton, P. (L.)

SOUTH CAROLINA

Aiken—Wyman, H. H., Jr. (C.)
Central—Bearden, J. D. (L.)
Chesterfield—Gardner, R. L. (C.)
Union—Maddox, T. (C.)

SOUTH DAKOTA

Britton—Kaps, F. O. (C.)
Sioux Falls—Kellar, W. F. (C.)

TENNESSEE

Ben Franklin—Morehead, T. R. (C.)
Columbia—Biddle, P. D. (C.)
Greeneville—Lane, J. F. (L.)
Knoxville—Hutson, G. C. (L.)
White, W. H. L. (C.)
Laurel Bloomery — Widener, W. W. (L.)
Memphis—Bailey, C. O. (L.)
Cailton, C. M. (L.)
Nashville—Teachout, S. R. (C.)
Woodstock — Henderson, W. L. (C.)

TEXAS

Amarillo—Puckett, B. M. (L.)
Dallas—Bourland, J. W. (C.)
El Paso—Clutter, B. F. (L.)
Fort Worth—McKean, R. W. (L.)
Galveston—Hoecker, W. L. (C.)
Ganado—Dobbs, J. C. (C.)
Gatesville—Graves, E. (C.)
Harlingen—McBride, G. A. (M.)
Henrietta—Jones, T. K. (C.)
Port Arthur—Reed, J. P. (L.)
San Antonio—Brown, A. A. (C.)
DePew, E. V. (M.)
Venable, C. S. (M.)
San Marcos — Williams, M. C. (L.)
Shalowater—Bounds, R. W. (L.)

VERMONT

Lyndonville—Brown, D. R. (L.)

VIRGINIA

Cardinal—Sandberg, E. T. (C.)
Eastville—Trower, W. B. (L.)
Hopewell—Perry, S. B. (L.)
Richmond—Flanagan, E. L. (C.)
Roanoke—Trout, H. H. (M.)

WASHINGTON

Puyallup—Karshner, W. M. (C.)
Seattle—Read, H. M. (M.)
Spokane — Harrington, W. W. (C.)

WEST VIRGINIA

Marlinton—Price, N. R. (C.)
Sullivan—Koiner, W. W. (C.)

WISCONSIN

Evansville—Cook, C. S. (L.)
Green Bay—King, G. F. (C.)
Livingston—Treglow, L. H. (C.)
Merton—Woodhead, F. J. (C.)
Milwaukee—Roby, H. S. (C.)
Nashtotah—Dempsey, G. P. (L.)
Oconomowoc—Stuesser, C. (L.)
Rhinelander — Richards, C. A. (M.)
Sheboygan—Gunther, O. T. (L.)
Soldier's Grove—Peterson, N. A. (C.)
Tomahawk—Pearson, L. M. (L.)
West Allis—McCorkle, S. C. (L.)

WYOMING

Sheridan—Newcomer, N. B. (C.)

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

CALIFORNIA

Los Angeles—Charlton, A. T.
Dickson, A. R.
Olds, W. H.
San Francisco—White, A. H.
Upland—Craig, J. B.

COLORADO

Denver—Milligan, C. F.
Shea, R. M.

DISTRICT OF COLUMBIA

Washington—Lewis, H. S.

GEORGIA

Atlanta—Johnson, T. C.

ILLINOIS

Charleston—Johnston, H. C.

NEBRASKA

Wauneta—Bailey, B. G.

NEVADA

Reno—Dahl, W. Z.

NEW JERSEY

Trenton—Watts, W.

NEW YORK

Brooklyn—Bartley, S. P.
Moore, J. L.
Middletown—Cook, F. H.
New York—Hunt, W. M.

NORTH CAROLINA

Raleigh—Royster, H. A.

OHIO

Toledo—Ramsey, T. L.

PENNSYLVANIA

Philadelphia—Ross, G. S.
Scheehle, J. E.

RHODE ISLAND

Newport—Rosser, C. M.
Providence—Matteson, G. A.

SOUTH CAROLINA

Clemson College—Redfern, T. C.

VIRGINIA

Suffolk—White, L. W.

WASHINGTON

Seattle—Nickson, D. H.

WISCONSIN

Ridgeway—Lee, D. R.

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Alabama

To Camp Sherman, Ohio, as camp surgeon, from Camp McClellan, Lieut.-Col. A. W. SCHOENLEBER.

To Fort McPherson, Ga., from Camp Dix, Major W. E. DRENNEN, Birmingham; from Camp Sheridan, Capt. E. SWANN, Marion.

Alaska

To Camp Lewis, Wash., base hospital, from Camp Fremont, Capt. J. H. MUSTARD, Nome.

Arizona

To Fort Des Moines, Iowa, from Camp Dix, Capt. R. D. KENNEDY, Globe.

To report to the commanding general, Western Department, from Camp Cody, Lieut. C. W. ADAMS, Globe.

California

To Fort Des Moines, Iowa, from Camp Meade, Capt. G. E. FULLER, Chula Vista.

To Philippine Department, from Camp Kearney, Major W. C. THOMAS.

To report to the commanding general, Western Department, from Camp Cody, Capt. C. B. HARE, San Jose.

To San Francisco, Calif., Letterman General Hospital, from Camp Fremont, Lieut. E. J. CHIDELLA, San Francisco.

To Tobyhanna, Pa., from Camp Lee, Capt. C. B. ADAMS, Los Angeles.

To Washington, D. C., from San Francisco, Major W. C. VON KESSLER.

The following order has been revoked: *To Denver, Colo.*, from Camp Kearney, Lieut. J. B. LUCKIE, Pasadena.

Canal Zone

To Camp Upton, N. Y., from Camp Dix, Major E P. BEVERLEY, Balboa.

Colorado

To Denver, Colo., as attending surgeon, from Fort Logan, Major W. W. GRANT, Denver.

To report by wire to the commanding general, Western Department, from Camp Lewis, Lieut. G. B. LEWIS, Denver.

Connecticut

To Camp Upton, N. Y., from Camp Wadsworth, Capt. G. M. MUREN, Norwalk.

District of Columbia

To Detroit, Mich., from Walter Reed General Hospital, Lieut. R. H. LEECE, Washington.

Florida

To Roland Park, Md., from Camp Joseph E. Johnston, Lieut. I. K. LOVETT.

Georgia

To Camp Bowie, Texas, base hospital, from Camp Logan, Lieut. R. F. Wilson, Atlanta.

Illinois

To Camp Custer, Mich., to examine the command for cardiovascular diseases, from Camp Beauregard, Lieut. E. F. MIELKE, Chicago.

To Camp Dix, N. J., base hospital, from Camp MacArthur, Lieut. M. LAMPERT, Chicago.

To Camp Meade, Md., base hospital, from Camp Grant, Major F. M. PHIFER, Chicago.

To Camp Upton, N. Y., from Camp Grant, Lieut. M. ROSENSTIEL, Chicago.

To Camp Zachary Taylor, Ky., base hospital, from Camp Greene, Lieut. G. E. PFEIFFER, Chicago; from Camp Sherman, Capt. R. S. BARNSBACK, Edwardsville; from Fort Riley, Lieut. W. H. HOWARD, Chicago.

To Chicago, Ill., from Camp MacArthur, Capt. H. G. LAMPE, Chicago.

To Fort Sheridan, Ill., from Camp Meade, Capt. F. P. HORAN, Evanston; from Camp Shelby, Lieut. P. T. DIAMOND, Evanston.

To Fort Snelling, Minn., from Camp Joseph E. Johnston, Lieut. J. P. GRAF, Chicago.

To Houston, Texas, from San Antonio Capt. H. E. MIZE, Chicago.

To report to the commanding general, Central Department, from Toledo, Lieut. L. B. CLINTON, Chicago. Southern Department, from Camp MacArthur, Lieut. A. W. GARLITZ, Danville.

Indiana

To Cape May, N. J., from Camp Wadsworth, Lieut. F. J. McMICHAEL, Gary.

To Chicago, Ill., from Camp Macarthur, Lieut. C. V. DAVISSON, West Lafayette.

To Fort McHenry, Md., from Houston, Lieut. B. J. PETERS, Kokomo.

To Philadelphia, Pa., from Camp Zachary Taylor, Capt. H. K. LANGDON, Indianapolis.

To Walter Reed General Hospital, D. C., for instruction, from Camp Meade, Capt. W. W. CAREY, Fort Wayne.

The following orders have been revoked: *To Detroit, Mich.*, from Camp Gordon, Lieut. D. T. MILLER, Terre Haute. *To San Francisco, Calif.*, from Camp Jackson, Lieut. E. E. FREEMAN, Greentown.

Kansas

To Belleville, Ill., Scott Field, from Vancouver Barracks, Capt. W. A. McCULOUGH, Manhattan.

To Camp Dodge, Iowa, base hospital, from Camp MacArthur, Capt. W. C. CHANEY, Independence.

To Chicago, Ill., from Fort McHenry, Lieut. C. H. SMITH, Pittsburg.

To Fort Riley, base hospital, from Camp MacArthur, Lieut. W. W. REED, Blue Rapids.

Kentucky

To Camp Zachary Taylor, Ky., base hospital, from Camp Dix, Capt. S. B. MARKS, Lexington.

To Fort Oglethorpe, from Camp McClellan, Capt. G. W. THRELKELD, Prospect.

Louisiana

To Camp Upton, N. Y., as camp surgeon, from Camp Beauregard, Col. G. H. SCOTT.

To Camp Zachary Taylor, Ky., base hospital, from Camp Upton, Capt. F. J. FRATER, Shreveport.

To Fort Oglethorpe, from Camp Beauregard, Major G. D. FRANCE.

Maryland

To Camp Meade, Md., base hospital, from Camp Dix, Lieut.-Col. A. M. SHIPLEY, Baltimore.

To Camp Travis, Texas, base hospital, from Camp MacArthur, Capt. I. I. HIRSCHMAN, Baltimore.

To Fort McHenry, Md., from Camp Dix, Capt. H. W. BRENT, Lieut. M. J. EGAN, Jr., Baltimore; from Hoboken, Major R. F. KIEFFER, Hagerstown.

Massachusetts

To Boston, Mass., from Camp Dix, Lieut. F. W. MARVIN, Boston; from Hoboken, Col. H. CUSHING, Boston.

To Camp Devens, Mass., base hospital, from Aberdeen, Capt. H. C. PERKINS, Boston.

To Camp Zachary Taylor, Ky., base hospital, from Fort Riley, Lieut. J. J. H. HILTON, Lawrence.

To Everman, Texas, from Vancouver Barracks, Lieut. L. J. ULLIAN, Boston.

To Fort Sam Houston, Texas, base hospital, from Camp Travis, Lieut. D. H. NISBET, Boston.

To Lakewood, N. J., from Camp Zachary Taylor, Lieut. T. E. BUCKMAN, Boston.

To Newport News, Va., from Camp Grant, Lieut. A. E. MILLS, Somerville.

To Philippine Department, from Hoboken, Lieut. S. V. KIBBY, Chelsea.

To Rockefeller Institute for instruction, and on completion *to his proper station*, from Hoboken, Lieut. C. W. BRUNINGHAUS, Worcester.

Michigan

To Camp Gordon, Ga., base hospital, from Camp MacArthur, Capt. J. O. PARKER, Owosso.
To Detroit, Mich., from Army Medical School, Major G. C. KIDNER, Detroit; from Camp Jackson, Lieut. I. E. BITTKER, Detroit.
To Fort Leavenworth, Kan., from Camp Dix, Capt. R. W. KRAFT, Ann Arbor.
To Fort Sam Houston, Texas, base hospital, from Camp Cody, Lieut. F. R. OSTRANDER, Lansing.
To report to the commanding general, Western Department, from Missoula, Lieut. H. A. KIRKHAM, Mount Clemens.

Minnesota

To Fort Snelling, Minn., from Camp Dix, Lieut. A. M. HANSON, Faribault.
To Washington, D. C., Surgeon-General's Office, from Camp A. A. Humphreys, Lieut. H. D. NEWKIRK, Minneapolis; from Mayo Clinic, Col. C. H. MAYO, Rochester.

Mississippi

To Eastview, N. Y., from Walter Reed General Hospital, Capt. J. T. HOSEY, Enterprise.

Missouri

To Camp Dix, N. J., base hospital, from Camp MacArthur, Lieut. H. S. LANGSDORF, St. Louis.
To Camp Knox, Ky., from Camp Cody, Lieut. E. B. RIDER, Kansas City.
To Camp Upton, N. Y., from Camp Crane, Capt. C. H. HECKER, St. Louis.
To Camp Zachary Taylor, Ky., base hospital, from Camp MacArthur, Capt. G. A. MELLIES, St. Louis.
To Fort Des Moines, Iowa, from Camp Dix, Lieut. S. F. WENNERMAN, St. Louis.
To Fort McHenry, Md., from Camp Dix, Capt. F. J. TAINTER, St. Charles; from Fort Riley, Capt. W. A. BECKEMEYER, Sedalia.
To Lakewood, N. J., and on completion *to Williamsbridge, N. Y.*, from Camp Meade, Lieut. J. F. McFADDEN, St. Louis.
To San Francisco, Calif., from Camp Hancock, Capt. W. J. LYNN, Kansas City.
The following order has been revoked: *To Camp Crane, Pa.*, from Hoboken, Lieut. F. F. HAAS, St. Louis.

Montana

To report to the commanding general, Western Department, from Camp Cody, Lieut. E. F. SWARTHOUT, Sykeston.

Nebraska

To Detroit, Mich., from Camp Dix, Major J. M. PATTON, Omaha.
To report to the commanding general, Western Department, from Camp Cody, Major L. B. STURDEVANT, Lincoln.

New Hampshire

To Army Medical School for instruction, from Walter Reed General Hospital, Lieut. A. F. SARGENT, Pittsfield.

New Jersey

To Camp Grant, Ill., base hospital, from Chicago, Lieut. H. J. PERLBERG, Jersey City.
To Newport News, Va., from Camp Hancock, Lieut. C. B. KEENEY, Summit.
To Washington, D. C., Surgeon-General's Office, from Hoboken, Col. W. L. KELLER.

New Mexico

To Camp Zachary Taylor, Ky., base hospital, from Camp Cody, Capt. C. S. LOSEY, East Las Vegas.

New York

To Camp Dix, N. J., base hospital, from Camp MacArthur, Lieut. N. S. SCHIFF, New York.
To Camp Dodge, Iowa, base hospital, from Camp Devens, Capt. W. S. DRISCOLL, Buffalo.
To Camp Meade, Md., base hospital, from Camp Dix, Lieut. K. S. STEELE, New York.
To Camp Sevier, S. C., base hospital, from Camp Dix, Lieut. J. R. PATTON, Staten Island.
To Camp Zachary Taylor, Ky., base hospital, from Fort Riley, Capt. J. J. BEARD, Cobleskill.
To Carlisle, Pa., from Walter Reed General Hospital, Capt. J. R. HUNTER, New York.
To Colonia, N. J., from Camp Dix, Capt. K. DWIGHT, New York; from Madison Barracks, Lieut. H. H. JOY, New York.
To Detroit, Mich., from Rochester, Lieut. G. E. STANBRO, Springville.
To East Norfolk, Mass., from Camp Dix, Lieut. P. L. DODGE, Poughkeepsie.
To Fort Des Moines, Iowa, from Camp Logan, Capt. S. F. WEITZNER, New York.
To Fort Porter, N. Y., from Camp Devens, Capt. J. H. CARR, Buffalo.
To Fort Sam Houston, Texas, from Camp Beauregard, Lieut. J. RESNIK, New York. Base hospital, from Camp Cody, Capt. A. AVATA, New York.
To Hoboken, N. J., from East Norfolk, Lieut. S. KOROWITZ, New York.
To Lakewood, N. J., from Camp Dix, Major B. C. PHILLIPS, New York.
To New Haven, Conn., from Camp Greene, Capt. T. S. WEST, Yonkers.
To Newport News, Va., from Camp Shelby, Lieut. H. A. PATTERSON, Buffalo.
To Otisville, N. Y., from Camp Custer, Capt. F. J. HERBIG, Staten Island.
To Philippine Department, from Camp Meade, Lieut. R. BOGAN, Brooklyn.
To Rockefeller Institute for instruction, and on completion *to Rochester, Minn.*, Mayo Clinic, for instruction, from Army Medical School, Lieut. W. D. GILL, New York.
To Tobyhanna, N. Y., from Washington, D. C., Capt. E. L. AYME, New York.
The following order has been revoked: *To Fort Snelling, Minn.*, from Camp Dix, Major E. L. HANES, Rochester.

North Carolina

To Camp Abraham Eustis, Va., from Camp Greene, Lieut. J. J. MOORE.
To Camp Wadsworth, S. C., base hospital, from Camp McClellan, Lieut. J. C. RICH, Candler.
To Denver, Colo., from Oteen, Lieut. P. H. CHARBONNOT.

Ohio

To Camp Sherman, Ohio, from Parkview, Pa., Lieut. H. S. JAMES, McArthur.
To Camp Upton, N. Y., base hospital, from Camp MacArthur, Lieut. W. H. HODGES, Columbus.
To Chicago, Ill., from Fort McPherson, Lieut. C. M. BRAY, Cleveland.
To Fort McDowell, Calif., from Camp Sherman, Lieut.-Col. W. T. CADE, Jr.
To Fort McHenry, Md., from the Surgeon-General's Office, Lieut.-Col. J. A. SHERBONDY, Youngstown.
To Fort McPherson, Ga., from Camp Sheridan, Lieut. J. J. JENNIE, Cincinnati.

Oklahoma

To Camp Pike, Ark., base hospital, from Camp Cody, Lieut. R. L. BROWNING, Haileyville.
To Camp Zachary Taylor, Ky., base hospital, from Camp MacArthur, Capt. E. F. DAVIS, Oklahoma City.

Oregon

To report to the commanding general, Southern Department, from Camp Lewis, Major I. B. BARTLE, North Bend.

Pennsylvania

To Camp Sherman, Ohio, base hospital, from Camp Dodge, Capt. S. STALBERG, Philadelphia.
To Camp Upton, N. Y., from Camp Dix, Lieut. W. H. MACKAY, Harrisburg.
To Camp Wadsworth, S. C., base hospital, from Waynesville, Major W. G. TURNBULL, Cresson.
To Fort Oglethorpe, from Camp McClellan, Lieut. I. HENDEL, Philadelphia.
To Walter Reed General Hospital, D. C., from Camp Zachary Taylor, Capt. H. H. TURNER, Pittsburgh.
To Washington, D. C., Surgeon-General's Office, from Camp Sheridan, Capt. J. G. TAYLOR, Tunkhannock.
The following order has been revoked: *To Camp Meade, Md.*, from Hoboken, Capt. J. D. CALDWELL, Irwin.

Philippine Islands

To San Francisco, Calif., from Philippine Department, Major A. J. CANNING.

Porto Rico

To Washington, D. C., U. S. Soldiers' Home, from Army Medical School, Lieut. C. S. MOSS, Jr., Ponce.

South Carolina

To Camp Meade, Md., from Camp Wadsworth, Major H. F. LINCOLN.
To Camp Shelby, Miss., as camp surgeon, from Camp Wadsworth, Lieut.-Col. J. F. JOHNSTON.
To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Fort Sam Houston, Texas*, base hospital, from Camp Sevier, Lieut.-Col. C. E. FRONK.

Tennessee

To Camp Meade, Md., base hospital, from Camp Dix, Major R. W. BILLINGTON, Nashville.

Texas

To Camp Upton, N. Y., from Camp Crane, Lieut. L. SCHELLER, Beaumont.
To Fort D. A. Russell, Wyo., from Camp Logan, Lieut.-Col. J. A. BURKET.
To Fort Sam Houston, Texas, base hospital, from Fort Bayard, Major I. S. KAHN, San Antonio; from Fort Sill, Capt. J. H. BRICE, Lamesa.
To Fort Sill, Okla., base hospital, from Camp MacArthur, Capt. C. E. DURHAM, Hico.
To report to the commanding general, Southern Department, from Camp MacArthur, Major H. B. JESTER, Corsicana.
The following order has been revoked: *To Camp Cody, N. M.*, base hospital, from Southern Department, Capt. F. L. PASCHALL, San Antonio.

Utah

To Fort Douglas, Utah, from Camp Cody, Capt. C. E. DORLAND, Devil's Slide.
To Fort Sheridan, Ill., from Fort McPherson, Lieut. H. SWANBERG, Salt Lake City.

Virginia

To Camp Dodge, Iowa, base hospital, from Walter Reed General Hospital, Capt. C. M. EDWARDS, Richmond.
To Camp Lee, Va., Major J. C. BOWMAN, East Radford. Base hospital, from Camp Dix, Major J. W. CARROLL, Lynchburg.
To Camp Pike, Ark., base hospital, from Fort Sill, Capt. L. N. HARRIS, Harrisonburg.
To Fort McHenry, Md., from Camp Dix, Capt. J. F. GEISINGER, Richmond.
To Washington, D. C., Surgeon-General's Office, from Camp Dix, Major H. H. TROUT, Roanoke.

Washington

To San Francisco, Calif., from Camp Lewis Capt. H B. CLQUGH, Tenasket.

West Virginia

The following order has been revoked: *To San Francisco, Calif.*, from Camp Zachary Taylor, Capt. L. A. PETTY, Charleston.

Wisconsin

To Fort McHenry, Md., from Camp Joseph E. Johnston, Capt. B. F. HOYT, South Kaukauna.

To report to the commanding general, Western Department, from Camp Cody, Capt. M. C. CRANE, Osseo.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Fort Sheridan, Ill.*, from Camp Custer, Lieut. I. E. LEVITAS, Green Bay.

ORDERS TO OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Acting Asst. Surg. L. L. SOLOMON, proceed to Washington for conference relative to venereal disease control measures in Kentucky.

Special Investigator C. W. METZ, proceed to Washington for conference relative to investigation after returning to work of the Carnegie Institution.

Sanitary Engr. H. H. CROHURST, relieved at Fort Worth, Texas. Proceed to Wilmington, N. C., for studies of sewage disposal.

Asst. Sanitary Engr. S. B. BOWNE, proceed to Memphis, Tenn., for completion of records of Service work at Millington.

Asst. Sanitary Engr. W. A. HARDENBURG, relieved at Fort Worth, Texas, proceed to Wilmington, N. C., for studies of sewage disposal.

Scient. Asst. C. W. CRANE, proceed to Hattiesburg, Miss., via Louisville, Ky., to take over the operations of the venereal disease clinic.

Supervising Nurse ANN DOYLE, proceed to New York, N. Y., and Elizabeth, N. J., for the purpose of presenting the subject of venereal disease control before the Lincoln Hospital and Home Training School for Nurses on March 18, 1919, and the annual meeting of the New Jersey State Nurses' Association April 1, 1919.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Influenza.—According to the report of Dr. William C. Hassler, health officer of San Francisco, out of an appropriation of $50,000 for combating influenza in the city, $35,293 was spent for that purpose. The secretary of the state board of health, Dr. W. F. Kellogg, late in February sent out circular letters to local health boards in an endeavor to determine whether there was a third wave of epidemic influenza throughout the state. The indications were that there were only local rises in the number of cases in widely scattered communities.

FLORIDA

Venereal Clinic Opens.—A venereal clinic was opend at the old City Hospital, Miami, January 24, by the state board of health and the United States Public Health Service. The clinic is open from 8 to 9 in the morning, and 5 to 6 in the evening.

Automobile Service Agent Victimizes Physicians.—We are informed by Dr. James V. Freeman of Jacksonville that an agent giving the name of Smith and claiming to represent an automobile service company of St. Louis is proffering to physicians membership in this organization at $50. Dr. Freeman wrote to the headquarters of the association and finds that there is no such concern within the knowledge of the postal department.

ILLINOIS

Dispensary for Decatur.—Dr. George G. Taylor, of the division of social hygiene, state department of health, Springfield, has arranged for the opening of a dispensary in that city for the treatment of venereal diseases. The equipment will be furnished by the department of health, and the dispensary will be operated by the city under state supervision.

Anniversary Meeting.—The seventy-first anniversary meeting of the Peoria Medical Society was held, February 17. Dr. Rolland L. Green, Peoria, president, acted as toastmaster; names of forty-six members of the society who have served during the war were printed on the program as an honor roll, and the addresses made dealt with the bravery and sacrifices of American soldiers.

Memorial for Soldiers.—A movement for a hospital rather than a community house as a soldier's memorial for Highland Park was advanced, February 27, at a meeting of 150 women of that suburb, at which it was agreed by the hospital authorities that the hospital be rededicated as a memorial, provided enough money is raised to build an annex for the treatment of contagious disease patients.

Influenza.—A second epidemic of influenza was reported from Duquoin, February 28, where it was said there were 300 cases reported, with a number of deaths; fifty cases were reported from Sunfield in the same neighborhood, and many cases among the farmers. The state health department reports influenza as leading in the number of contagious disease cases, the number for the week ending February 22 being 1,680, of which Chicago had 498.

Illegal Practitioners Sent to Jail.—Jeff Mardon, East St. Louis, was arrested by an inspector of the department of registration and education for practicing medicine without a license. He was fined by the court but was unable to pay it. He was then committed to the county jail for two months.——Dr. J. J. Vizgird of St. Louis was arrested by the department of registration and education for practicing medicine in Illinois without a license. Vizgird was unable to give bond and is now in jail awaiting trial. This is the third time Vizgird has been in the court in St. Clair County for practicing in Illinois without a license.

Chicago

New Passavant Hospital.—A new Passavant Hospital to cost about $1,000,000 is to be built to replace the present hospital at Superior and LaSalle streets.

Hawkins in Jail.—The self-styled divine healer known as the "Rev. Dr." Walter Hawkins was again taken into custody, February 21, on a charge of violation of the medical practice act. Hawkins now has five such charges pending against him.

Personal.—Harry D. Orr, Lieutenant-Colonel, M. C., U. S. Army, formerly commanding officer of the 108th Sanitary Train, 133d Division, has been appointed division surgeon of the Thirty-Third Division, which is located in the Duchy of Luxembourg near Treves, Germany, in reserve for the Third American Army.——Walter J. Sullivan, Lieutenant, M. C., U. S. Army, who was severely wounded last May, after four months in a hospital in London was returned to Marseilles, and has been reassigned to duty with the British Expeditionary Forces.——Maurice L. Goodkind, Dallas Phemister, Samuel C. Plummer and William McI. Thompson, Majors, M. C., U. S. Army, and George H. Miller and William F. Bernart, Captains, M. C., returned from abroad on the U. S. S. *President Grant*, February 26.——Carey Culbertson, Major, M. C., U. S. Army, who has been on duty at Camp Pike, has been discharged and reached Chicago, March 2.——Andrew J. Lyons, Major, M. C., U. S. Army, has returned from abroad. ——Dr. Samuel J. Walker, who went to Greece with the American Red Cross Medical Mission last year, is now on duty in the remote districts in Macedonia.——Dr. Tracy H. Clark has been elected president of the medical section of the National Fraternity Congress of America.——Joseph A. Capps, Lieutenant-Colonel, M. C., and Ray H. Davies, Major, M. C., U. S. Army, have returned from abroad.——Herbert H. Frothingham, Major, M. C., U. S. Army, who has been on duty at Fort Des Moines as chief of the medical service for more than a year, has returned to Chicago and resumed practice.

KANSAS

Personal.—Dr. Dellett E. Bronson, Olathe, has been appointed physician of Johnson County.——Dr. Samuel J. Herrick, Everest, announces his retirement after thirty years of practice.

Appropriation Asked.—Senator Milligan, Garnett, has introduced into the Kansas legislature a bill for an appropriation of $25,000 for the purchase of vaccine to aid in the control of epidemics, and $25,000 additional for the state board of health, to be used in controlling epidemics in any way it may be deemed best.

New Officers.—At the annual meeting of the Barton County Medical Society, held in Hoisington, Dr. Horace C. Embry was elected president, Dr. Thomas J. Brown, vice president, and Dr. Benjamin S. Pennington, secretary-treasurer, all of Hoisington.——The Leavenworth County Medical Society at Leavenworth, February 10, elected Dr. Charles J. McGee president; Dr. Clarence C. Goddard vice president, and Dr. Jacob L. Everhardy secretary-treasurer, all of Leavenworth.

Cost of Preventable Disease.—Dr. John J. Sippy, Topeka, epidemiologist of the Kansas State Board of Health, announces $11,000,000 as the sum which preventable diseases

cost the state of Kansas during 1918. These diseases were typhoid fever, tuberculosis, smallpox, scarlet fever and diphtheria. The state board of health is endeavoring to convince the legislature that it should divide the state into forty health districts, each supervised by a competent official, who will devote his entire time to the work.

Proceedings in Paternity.—A bill entitled "Proceedings in Paternity" which is of special interest to physicians has been introduced in the Kansas legislature by Dr. Lydia Allen DeVilbiss, director of the division of child hygiene, state board of health, Topeka. The bill provides that any physician, nurse, midwife or other attendant on the birth of a child born out of lawful wedlock shall, under penalty of misdemeanor, report the fact in writing within ten days to the juvenile court, whereupon it becomes the duty of the court to institute inquiry proceedings. In this manner, the responsibility for establishing the parenthood of a child born out of lawful wedlock is shifted from the girl-mother to the state of Kansas. The man found by a judge to be the father of the child is charged with the same responsibility for the maintenance, education and care as is now imposed or shall in the future be imposed on a father of a child born in lawful wedlock of like age and capacity.

MARYLAND

Personal.—J. Albert Chatard, Major, M. C., U. S. Army, Baltimore, chief of the medical service at Base Hospital No. 78, which was located near St. Mihiel, France, has returned to the United States and is now stationed at Camp Dix, awaiting discharge.——Lloyd B. Whitham, Captain, M. C., U. S. Army, a member of the Johns Hopkins Unit and chief surgeon of the advanced eye center of the American Expeditionary Forces, has returned to his home in Baltimore.——Richard F. Kieffer, Major, M. C., U. S. Army, Hagerstown, who was in command of Base Hospital No. 18 (the Johns Hopkins Unit), Louis J. Casamajor, Major, M. C., U. S. Army, and George R. Dunn, Captain, M. C., U. S. Army, also of Base Hospital No. 18, are to be retained for further service. The remainder of the staff have received their discharge.——Peregrine Wroth, Captain, M. C., U. S. Army, Hagerstown, who has been with the medical division of the U. S. Army in France, has arrived in this country and is stationed at Camp Dix, N. J.

MISSOURI

Fire in Hospital.—A disastrous fire almost destroyed St. Mary's Hospital at Jefferson City, February 20, endangering the lives of patients and nurses. The citizens have begun steps for immediate reconstruction of the building.

Health Bill.—The state board of health has introduced a bill in the legislature to give the board broader powers, especially in regard to communicable diseases and better control of county health officers, and the children's code commission has prepared a series of bills which, if passed, will establish adequate measures for the intelligent conservation of child life. In his message to the legislature, Governor Gardner has advocated the passage of these measures. At present the Missouri board cannot participate in the federal appropriation for the control of venereal diseases because the board of health cannot legally declare what diseases are communicable or require reports.

Personal.—John F. Binnie, Lieutenant-Colonel, M. C., U. S. Army, Kansas City, is reported to be en route from France. Colonel Binnie was in charge of Base Hospital Unit 28 when he was sent overseas, but was later made chief consulting surgeon of the Third Army Corps, and afterward appointed chief consulting surgeon for all the base hospitals at Limoges.——Dr. Wilson J. Ferguson, Sedalia, has been reappointed a member of the state board of health in the place of Dr. Andrew W. McAlester, Columbia. Dr. Ferguson was president of the state board of health when he accepted a commission in the Army, and Dr. McAlester was appointed to fill the vacancy thus created. On the return of Dr. Ferguson, Dr. McAlester resigned and requested that Dr. Ferguson be reappointed to his old position.

Volunteers for Medical Inspection.—Thirty-two physicians in Kansas City have volunteered their services for medical inspection of the children in public schools. Many of the citizens of Kansas City, especially the mothers with enlightened ideas of modern methods of preventing disease, have repeatedly petitioned the local board of health to establish a system of medical inspection of schoolchildren, but all efforts in this direction have proved futile. It is said that the parochial schools provide medical inspection for their pupils. Some work has been done in public schools through the generosity of private citizens and the voluntary cooperation of members of the Jackson County Medical Society, but as yet the city authorities have not assumed the responsibility that should be theirs in protecting the children and the general public from the spread of communicable diseases originating among schoolchildren.

St. Louis

Military Medicine Meeting.—The meeting of the St. Louis Medical Society, March 1, was devoted to military medicine. Dr. Arthur W. Proetz spoke on Base Hospital No. 21 in France. Dr. Robert E. Schlueter considered United States base hospitals. Dr. Stanley S. Burns described an evacuation and field hospital. Dr. Malcolm A. Bliss detailed the work in the recruiting depot of the line officers' training camp.

Chiropractors Arrested.—Four chiropractors were arrested in St. Louis, February 28, at the instance of the health department, charged with unlawfully practicing as physicians. The representatives of the health department assert that they consulted the four chiropractors on different dates and that each member of the fraternity of spinal manipulators diagnosed a malady although both of the investigators were in perfect physical condition, and charged fees for their medical opinion.

NEW YORK

Meningitis Carrier Detected.—Officials of the state department of health, Albany, believe they have prevented a serious outbreak of cerebrospinal meningitis by the prompt detection and isolation of a meningitis carrier. The carrier was a soldier who returned a short time ago to his home at New Baltimore. Soon after his return, his niece was stricken with cerebrospinal meningitis, and the soldier was the only one of the contacts to respond positively to the test. He was accordingly isolated, and no other case of the disease developed.

Postgraduate Course in Infectious Diseases and Public Health.—Arrangements have just been perfected by which a new course in infectious diseases and public health is being given under the joint direction of the Albany Medical College and the New York State Department of Health. The new course started, March 5, and is open both to physicians and health officers, but will have no connection with undergraduate instruction. The course will be under the general supervision of Dr. Charles C. Duryee, Schenectady, sanitary supervisor, state department of health, Albany, to whom all correspondence regarding the course should be addressed. The fee is $25, payable in advance, or in monthly instalments if desired. Those who have completed any of the various courses of instruction for health officers, either at Albany or elsewhere in the saate, are invited to attend the course at a nominal fee of $5. Attendance of one day weekly during March and April, and one and a half days during May and the first two weeks in June, will be required. On completion of the course and a satisfactory examination, a certificate will be issued.

Sanitary Supervisors' Conference.—A conference of the sanitary supervisors with the directors of divisions of the state department of health was held at Albany, February 25, 26 and 27. At the first meeting Dr. Harry A. Bray, acting superintendent of the New York State Hospital for Incipient Tuberculosis at Raybrook, gave an address on the best methods of diagnosing incipient tuberculosis; Dr. Joseph S. Lawrence, chief of the bureau of venereal diseases, discussed pneumonia serum and its administration, and Dr. James C. Ayer, of the same bureau, demonstrated the administering of arsphenamin. In the evening a talk was given at the Elk's Club on syphilis and gonorrhea by Dr. Frederick S. Honsinger, Syracuse, of the bureau of venereal diseases, the talk being followed by a presentation of the film "Fit to Win." On the second day the directors of divisions discussed their problems and future plans so far as they were related to the work of the sanitary supervisors. The organization of health conservation committees was also taken under consideration. In the afternoon a conference was held between the supervisor of public health nurses and the nurses of the department. A second conference also was held between the orthopedic surgeon of the department and the infantile paralysis after-care staff. On the third day a report was given by Dr. Charles C. Duryee, Schenectady, on his work of scoring health activities in cities. This report was followed by a history of influenza epidemics by Dr. Otto R.

Eichel, Albany. A conference was also held between the chief of the bureau of venereal diseases and the members of his staff.

New York City

Harvey Society Lecture.—The fifth lecture of the Harvey Society series will be delivered at the New York Academy of Medicine, at 8:30 p. m., March 15, by Col. F. P. Underhill, on "War Gases."

Medical Inspectors Form Organization.—The medical inspectors of the health department met in the county court house, Manhattan, February 21, and effected temporary organization as a council of the New York Civil Service Society. Dr. Maria M. Vinton, Richmond Hill, was chosen chairman, Dr. Maude Glasgow secretary, and Dr. Theodore A. Lehmann treasurer.

Fund to Perpetuate Dr. Cragin's Follow-Up Work.—In order to perpetuate the work of Dr. Edwin Bradford Cragin in connection with the Sloane Memorial Hospital, an organization has been formed to raise $100,000 for the purpose of enlarging and extending the social service activities of the hospital. Dr. Cragin developed the method of caring for maternity and other patients after they had left the hospital, and made this part of the work possible largely through his own contributions, augmented by gifts from grateful patients. The endowment fund which it is now proposed to raise is in the hands of Henry K. McHarg, at 40 Wall Street.

Personal.—Dr. Stephen Smith, for thirty years a member of the state board of charities, celebrated his ninty-sixth birthday anniversary, February 19.——Dr. Herman Seidler, Brooklyn, who pleaded guilty to a charge of speeding, January 31, was fined $100 and sentenced to ten days in jail, was granted his freedom, February 3, and released on a bail bond of $250, pending an appeal of his case to the county court. ——Lieut.-Col. Walter C. Montgomery, surgeon of the Twenty-Seventh Division, formerly the New York National Guard, and Lieut. Lee A. Hadley, Syracuse, have received divisional citations for meritorious conduct during engagements in Belgium and France.——Dr. James Alexander Miller has had conferred on him by the French government the decoration of a Chevalier of the Legion of Honor in recognition of his service in connection with the campaign against tuberculosis conducted by the Red Cross and the Rockefeller Foundation.——Dr. John A. Ferguson of Brooklyn has been appointed medical examiner with the municipal civil service commission.

Opposition to Health Insurance Bill.—At the meeting of the Medical Society of the County of New York, February 24, the committee on health insurance, after having conferred with both professional and lay persons interested in the subject, offered a number of amendments to the Donohue bill for the consideration of the society, but in doing so declared that it was to be distinctly understood that it in no wise committed itself either in favor of the Donohue bill or of the scheme of compulsory health insurance as a whole. It simply presented these amendments to the bill in order that if some such bill was enacted into law the interests of the medical profession might be properly safeguarded. The society adopted these amendments but made it clear that it had not withdrawn its condemnation of compulsory health insurance as a whole.——On the same evening the physicians, dentists and pharmacists of Brooklyn, at a mass meeting of the various societies held under the auspices of the Kings County Medical Society, passed resolutions unanimously opposing the Donohue bill.——The Bronx County Medical Society has also gone on record as strongly opposed to the measure.

OHIO

Arrested on Drug Charge.—Dr. Moritz Lowenthal and H. L. Treat, managers of the Rest Cure Sanitarium, Cleveland, are said to have been arraigned before United States Commissioner McGuire, February 13, on a charge of illegally possessing morphin. Federal agents are said to have raided the sanatorium and confiscated narcotics valued at $30,000.

State Society Meeting.—The seventy-second annual meeting of the Ohio State Medical Association is to be held in Columbus, May 6, 7 and 8. The forthcoming convention is expected to be the largest in point of attendance and interest in the history of the Ohio state association. A number of committees are already at work in planning the program. Among the interesting features which are being planned in connection with the exhibition will be scientific exhibits by the state department of health, the Ohio Board of Administration, the Ohio School for the Blind, and the National Society for the Control of Cancer.

Personal.—Dr. Oscar H. Sellenings, who was appointed health officer of Columbus, February 15, was removed after a brief tenure of office, February 19, when it was ascertained that he was violating the state health law by serving as health officer while still a member of the state board.—— Dr. William L. Dick, Columbus, is serving as health officer until a successor to Dr. Louis Kahn is elected.——Dr. Charles W. Hedrick, Willard, is reported to be seriously ill with septicemia.——Dr. Charles P. King, Columbus, was stricken with cerebral hemorrhage, February 11.

Tuberculosis Instruction to Physicians and Nurses.—The Ohio State Sanatorium, Mount Vernon, announces that courses of instruction will be conducted at the sanatorium in June, and that physicians and visiting district public health and tuberculosis nurses will be given the benefit of the results obtained at the institution, and this without expense. June 9 to 14 will be devoted to special lectures and courses of instruction to nurses on the subject of public nursing as it effects the tuberculosis situation in Ohio, and the two weeks following, from June 16 to 28, will be open to the medical fraternity for special instruction courses that will embrace twenty lectures, taking in every phase in the history and treatment of the disease. In addition to the regular staff of nurses and physicians at the sanatorium, a number of specialists will assist. Dr. Stephen A. Douglass, superintendent of the sanatorium, has just returned from Italy, where he has been for six months as a member of the American Red Cross Commission, and during his absence Dr. Jay D. Thomas has been medical superintendent. The staff of the sanatorium also includes Drs. Louis Mark and Frank M. McCafferty.

PENNSYLVANIA

Conference of Industrial Physicians.—The eighth conference of Industrial Physicians and Surgeons, held under the direction of the Pennsylvania Department of Labor and Industry, will convene at the William Penn Hotel, Pittsburgh, March 14. The chief topics of discussion are: "Traumatic Hernia and the Compensation Board"; "How the Industrial Physicians and Our State Department of Health Can Best Cooperate"; "Carbon Monoxid Poisoning —Its Prevention and Treatment"; "Sprained Back and Flatfoot"; "Health Hazards in the Manufacture of Dyestuffs"; "How the Industrial Physicians Can Help in the Campaign Against Venereal Disease," and "Health Insurance, Its Disadvantages and Advantages."

Personal.—Dr. Howard L. Hull of Camp Hill, Cumberland County, medical officer of the U. S. Army, has been appointed chief medical inspector of the state department of health.——Joel T. Boone, Lieutenant-Colonel, M. C., U. S. Army, Pottsville, regimental surgeon to the Sixth Marines, who received the distinguished service cross with two additional bars for citations, has returned to his home.——Dr. John N. Sprowles, Claysville, second vice president of the Medical Society of the State of Pennsylvania, was seriously injured, February 21, when his automobile went over an embankment near Taylorstown, sustaining a fracture of the left hip and laceration of the left knee, and is under treatment at the City Hospital, Washington.——Dr. Torrance John Hanlon, Captain, M. C., U. S. Army, Donora, who was decorated by King George of England in December last, for conspicuous bravery, has returned to the United States and is on duty at a government hospital near Pittsburgh. ——Dr. Sidney A. Slater has resigned as superintendent of the Grand View Sanatorium, Oil City, to become superintendent of the Southwestern Minnesota Sanatorium, Worthington, Minn. This sanatorium was established by the counties of Rock, Pipestone, Lyon, Lincoln, Murray, Cottonwood, Nobles and Jackson.

Philadelphia

Rush Memorial.—A plan to preserve the homestead of Berry Rush at Byberry as a medical museum in memory of the early Philadelphia surgeon has been advanced by Mrs. C. D. Joyce, owner of the property. The old house is still standing and is near the city farms at Byberry.

Laboratory Chartered.—Judge Staake has chartered the dermatologic research laboratories which were formed in November, 1912, for the prime purpose of discovering psoriasis. The membership of the associates working in this laboratory includes Dr. J. Chamberg, Dr. F. J. Colmer, Dr. David Riesman and Dr. Albert D. Ferguson.

Officers Elected.—At the stated meeting of the Philadelphia Genito-Urinary Society, February 24, the following offi-

cers were elected for the ensuing year: president, Dr. Benjamin A. Thomas; vice president, Dr. A. Haines Lippincott; secretary-treasurer, Dr. William H. MacKinney, and chairman executive committee, Dr. Charles S. Hirsch.

City Physicians' Strike Off.—Forty-seven of the city's assistant school inspectors, who demanded an increase in salary from $600 to $1,000 a year, have withdrawn their demands. There are 220,000 schoolchildren in the city, and the work of these physicians consists not alone in protecting children from disease, but also in improving the health of those who are poorly nourished and in continuing the education of the crippled and tuberculous. A clinic is maintained for the examination of those mentally deficient. Truant children are visited to determine their physical fitness. The report of the work shows that sixty-four physicians and forty-one nurses last year made 147,631 examinations and discovered 143,172 physical defects and diseases.

Personal.—Joseph Sailer, Lieutenant-Colonel, M. C., U. S. Army, and Benjamin F. Baer, Charles F. Nassau, and Albert P. Francine, Majors, M. C., U. S. Army, have returned to this country.——Dr. Jacob S. Cohen, for many years professor of electrotherapeutics in the Jefferson Medical College, was 81 years old, February 27.——Lieut. Andrew Knox, M. R. C., has received the English military cross for gallantry in the field under heavy machine gun fire.——Dr. S. Leon Gans of Philadelphia, surgeon in the Spanish War, and a captain in the Army, has been named chief of the genito-urinary dispensaries of the state department of health.——Dr. Samuel Friedenberg has been appointed assistant medical inspector of the bureau of health.——Drs. Howard S. Mace, D. J. Gallaher and M. Chapiero have been appointed assistant medical school inspectors.——Dr. William Campbell Posey, for twenty-five years attending physician at Wills Hospital, has been elected as consulting physician to the hospital.——Dr. Thomas E. Conard has been appointed acting attending surgeon to the institution.——Dr. Luther C. Peter has been elected professor of ophthalmology in the Graduate School of the University of Pennsylvania.——Dr. William Williams Keen had conferred on him the honorary degree of Doctor of Laws by the University of Pennsylvania, university day. In conferring the degree, Provost Smith paid the following tribute to Dr. Keen:

"William Williams Keen, voluminous writer on medical subjects, especially surgery, in which you have an international reputation.

"Corresponding member of learned societies in England, Scotland, Belgium, France and Italy.

"Honored at home and abroad by ancient universities with their highest degrees. Author of meritorious historical documents. Active participant in all social movements of an uplifting nature, sturdy patriot. Only commissioned officer in the present war who was a comsioned officer during the Civil War. Beloved teacher, honored citizen, I confer upon you the degree of doctor of laws.

RHODE ISLAND

Program of Public Health Work.—Gov. R. Livingston Beekmann has recently given public health work in Rhode Island a great impetus by becoming personally responsible for a large program. In October he called Dr. Lydia Allen DeVilbiss, Topeka, director of the division of child hygiene, Kansas State Board of Health, to make a study of the health conditions as related to the children of Rhode Island, and to formulate a program for child welfare. As a result of this investigation and report, bills have been introduced into the legislature creating a division of child hygiene and a division of vital statistics in the state board of health; a director of health and physical training of the state normal school who shall be ex-officio state director of medical inspection in the schools; and removing some of the existing disabilities of the school attendance law and strengthening the present child labor legislation.

VIRGINIA

Personal.—The residence and office of Dr. Robert A. Warren, Hot Springs, including the Midway Inn, which was owned by the family, were destroyed by fire, February 22, with a loss of $50,000.——Dr. W. D. Sydnor, Hamilton, is under treatment in the Loudoun Hospital awaiting operation for chronic appendicitis.

CANADA

Hospital News.—Twenty-three of the leading physicians of Calgary, Alta., have issued a statement giving their hearty approval to the municipal hospitals scheme of that province. They have not been opposed to these hospitals but opposed to political capital being made out of the movement.——A tuberculosis hospital is to be built at Bowness, Alta. The cost is to be $400,000, of which the province will bear $200,000 and the dominion government $200,000.

Osteopathy Still Banned in Quebec.—The osteopaths have not been successful in getting the bill for license to practice in that province passed by the public bills committee of the legislature, but state that they will keep on renewing the fight each year.

Tuberculosis a Serious Menace in Quebec.—The Quebec government has studied the question of tuberculosis in that province and has found that 3,000 die annually. The contract between the provincial and federal governments to provide for the extension of the work of caring for the tuberculous at Ste. Agathe has been ratified by the legislature, and the institution will be used for the next five years solely for soldiers with tuberculosis. The sanatorium was established in 1911 with seventy beds, and has treated 795 patients. It will be extended to 271 beds.

Personal.—Major Frederick N. G. Starr has returned from overseas to Toronto.——Col. Herbert A. Bruce is returning to Toronto from overseas after several years' service, and is bringing with him an English bride.——Capt. Charles G. Cox, Humboldt, Sask., has been permanently attached to the local board of pension commissioners as medical examiner.——Dr. Andrew Croll, who has been overseas some years, has resumed practice in Saskatoon. Latterly he has been chief surgeon at Camp Hill Military Hospital, Halifax, N. S.——The Order of Companions of St. Michael and St. George has been conferred on the following members of the Canadian Army Medical Corps: Cols. Hugh Chisholm; Spurgeon Campbell, Winnipeg, Mann.; John Kidd; William Simpson, and Robert P. Wright, Quebec; and the order of Commanders of the Order of the British Empire on Cols. George D. Farmer, Ancaster, Ont., and John Stewart, Halifax, N. S.——Dr. Mowat has reached his home in Ottawa, Ont., having returned from overseas where he had been for some time a prisoner in Germany.——Dr. Thomas A. Carson, Orangeville, Ont., who has been in France, has returned and been appointed on the pension board, Ottawa.

GENERAL

Bequests and Donations.—The following bequests and donations have recently been announced:

Marquette Medical School Dispensary, $133,000 as an endowment by the family of Patrick Cudahy.

Johns Hopkins Hospital, Baltimore, $400,000 for the erection of a building to serve as a women's clinic by an anonymous donor.

Johns Hopkins University, Baltimore, the "Tudor and Stewart Club" in memory of Revere Osler, endowed by Sir William and Lady Osler.

Personal.—At the French General Headquarters, January 10, the Croix de Guerre with gold star was conferred on Percy L. Jones, Col., M. C., U. S. Army, chief of the American Sanitary Section of the French army.——Major-General and Mrs. Merritte W. Ireland entertained at dinner thirty guests recently, in honor of Victor C. Vaughan, Col., M. C., U. S. Army, Ann Arbor, Mich., and Mrs. Vaughan.

Appropriations for Hospitals.—February 21, the following appropriations were made for hospitals for returning soldiers and sailors: for the establishment of a hospital in Cook County (Speedway Hospital), $3,000,000; for the establishment of a hospital at Dawson Springs, Ky., $1,500,000; for the establishment of a hospital, at Norfolk, Va., $900,000; for the establishment of a hospital in the District of Columbia, $500,000; for improvements in operations on the hospital at Stapleton, Staten Island, N. Y., $190,000.

Tri-State Election.—At the annual meeting of the Tri-State Medical Association of Virginia and the Carolinas, held at Richmond, Va., February 19, under the presidency of Robert S. Cathcart, Major, M. C., U. S. Army, Charleston, S. C., the following officers were elected: president, Dr. Robert C. Bryan, Richmond; vice presidents, Drs. Clifton M. Miller, Richmond; Andrew J. Crowell, Charlotte, N. C., and Augustus R. Taft, Charleston, S. C., and secretary-treasurer, Dr. Rolfe E. Hughes, Laurens, S. C. The association will hold its next meeting at Winston-Salem, N. C.

Joint Influenza Committee.—It was announced, February 20, that a joint influenza committee has been created by the Surgeon-Generals of the Public Health Service, the Army and the Navy, and the director of the census, to study the epidemic of influenza and to make comparable the influenza data gathered by the government departments. The committee consists of Dr. William H. Davis, Washington, D. C., chairman, and Mr. C. H. Sloane of the Census Bureau: Dr.

Wade H. Frost, Washington, D. C., and Mr. Edward Sydenstricker, of the Public Health Service; Col. Deane C. Howard, Col. Frederick F. Russell and Lieut.-Col. Albert G. Love of the Army, and Lieut.-Com. Joseph R. Phelps and Surg. Carroll Fox of the Navy.

Aspirin and Espionage.—In an address in Philadelphia, March 1, according to the Philadelphia *Public Ledger*, Mr. A. Mitchell Palmer, made some "startling disclosures of the extent to which German capital operated in this country with purposes hostile to America." The *Ledger* says in part:

Mr. Palmer told how when the Bayer Aspirin Company was seized in New York twenty-three trunks were found in the cellar of the building. Officials of the company explained that these trunks contained clothing belonging to employes and when they were opened they were found to contain the papers of almost the entire workings of the Bernstorff system of espionage.

Public Health Education Campaign.—A nation-wide campaign for public health education is one of the first of the peace time activities to be undertaken by the Red Cross, and plans for this are well under way. Realizing that the Chautauqua itineraries offered unusual opportunities to reach communities most in need of health work, the Red Cross Department of Nursing is assigning between thirty and forty of its most able nurses, who have just returned from overseas, to lecture on the principal Chautauqua circuits throughout the country. The lectures are to start about June 1. In each instance the lecture will be followed by a squad of other nurses and Red Cross workers, who will conduct a health exhibit and give practical demonstrations.

Influenza.—According to *Public Health Reports*, February 21, with local variations the number of cases of influenza reported has declined since about the middle of January in all parts of the country from which reports have been received. Reports to the service for the week ended February 15 indicate a general decline in the number of cases. As compared with the previous week, fewer cases were reported in Alabama, California, Connecticut, Florida, Illinois, Iowa, Kansas, Louisiana, Maine, New Jersey, North Carolina, Ohio, Oklahoma and Virginia. Arkansas and Vermont reported increases, but the number of cases was not large. Reports from the extracantonment zones indicate a slightly smaller number of cases than for the previous week.

Country Districted for Social Hygiene Board.—For purposes of administration, the Interdepartmental Social Hygiene Board has established districts as follows, each district being in immediate charge of a supervisor:

District 1.—Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island.
District 2.—New York, New Jersey, Pennsylvania, Delaware.
District 3.—Maryland, District of Columbia, Virginia, West Virginia.
District 4.—Tennessee (Eastern), North Carolina, South Carolina, Georgia, Florida (Eastern).
District 5.—Florida (Western), Alabama, Mississippi, Louisiana, Tennessee (Western), Arkansas.
District 6.—Texas, Oklahoma, New Mexico.
District 7.—Arizona, California, Oregon, Washington.
District 8.—Utah, Nevada, Idaho, Montana, Colorado, Wyoming.
District 9.—North Dakota, South Dakota, Nebraska, Kansas, Missouri, Illinois, Iowa, Wisconsin, Minnesota.
District 10.—Michigan, Indiana, Ohio, Kentucky.

Welcome to the Spanish Edition of The Journal.—The *Gaceta Medica de Caracas* of Nov. 30, 1918, reproduces the official announcement of the publication of the Spanish edition of THE JOURNAL, and comments as follows: "We publish the letter which follows in order to let our colleagues of Venezuela know of the praiseworthy undertaking of the American Medical Association to issue an edition in Spanish of their under a thousand titles interesting periodical, which will be of true usefulness by its extensive, selected and varied reading matter. We hope that the Venezuela medical profession will give it decided support." Elsewhere in the same issue the *Gaceta* publishes an address by Dr. O. Montoro at a meeting of the Association of the Medical Press of Cuba. His subject was professional ethics. He emphasized that the press in general should feel called to improve customs in vogue if by doing so the progress and the happiness of the country would be promoted. "The medical press in particular has the obligation to watch out for the purity and the dignity of the profession, hundredfold worthier and nobler than those who are striving to corrupt it. We all of us know the organ of the American Medical Association. THE JOURNAL has been carrying on for a long time a campaign from which it has not been diverted by the powerful interests which attack it or by any influences, but continues its campaign to improve the professional morality among American physicians and sweep the market clear of many proprietaries which, as the least of the harm they do, defraud the patient. No one conscious of his duty can fail to realize the great influence which these campaigns have had on the moralization of a people and of a social class. And all this the American medical press realizes by means of its powerful Association and its admirable and well known organ, THE JOURNAL."

New Child Labor Law.—The new child labor law, passed by Congress, in effect prohibits the employment of children under 14 in factories, and of children under 16 in mines and quarries, insures a maximum eight-hour day, and prohibits night work for children between 14 and 16 employed in factories. As pointed out by the Children's Bureau, however, the number of children employed in the designated occupations is comparatively small, and even after the law is in force young children will be able to work at some time, in some occupations, in practically every state in the Union, and in many states boys and girls will be permitted to work long hours. The children not covered and protected by the Child Labor Law will have only such protection as is afforded by the varying laws of the states in which they live. Thus, while California, Michigan, South Dakota, Texas, Montana and Ohio fix the minimum age higher than 14, all except Ohio have exemptions from the law. New Mexico, Utah and Wyoming have no minimum age law except for children in certain dangerous or injurious occupations. North Carolina and Mississippi have a minimum age restriction less than 14, and many of the thirty-eight states, including the District of Columbia, have 14 as the minimum age, but grant exemptions allowing children under 14 to work in certain occupations, or during vacation, out of school hours, in case of poverty, or under other specified conditions. Seventeen states permit the employment of children under 16 for more than eight hours a day and forty-eight hours a week; two states place no limit on hours of work; thirty which have an eight-hour day do not cover all occupations and have certain exemptions; seven states do not forbid night work, while others prohibit it in certain occupations. The bureau calls attention to the fact that most states fail to protect children in agriculture and domestic service.

Board for Ophthalmic Examinations.—The American Board for Ophthalmic Examinations will hold its next examination at the Wills Eye Hospital, Philadelphia, June 6 and 7, 1919. This examination will be the fifth to be conducted by the board, which is composed of representatives of the American Ophthalmological Society, the Section on Ophthalmology of the American Medical Association, and the Academy of Ophthalmology and Oto-Laryngology. For a certificate of this board, the examination in ophthalmology consists of case records; written examination, and clinical laboratory and oral examinations, or so much thereof as may be judged necessary. Candidates in ophthalmology are required to submit twenty-five complete case records, of which not more than ten should be descriptive of operations. These records should be of cases of ocular diseases and defects of varied character, including errors of refraction or muscle balance, and external ocular diseases or diseases of the uveal tract or retina, or of the optic nerve, or glaucoma. The reports should show especially the reasons for the diagnosis, and for the operative treatment and the technic of operations in operative cases. The written examination will test the candidate's knowledge of the underlying principles of the science of ophthalmology, including anatomy, embryology, physiology, physiologic optics, pathology, relations of the eye to the other organs and diseases of the body. The oral examination will include: the external examination of the eye; ophthalmoscopy (candidates are requested to bring their own ophthalmoscopes); measurements of errors of refraction; testing of the ocular movements and fields of vision; relations of ocular conditions to diseases of other parts of the body and their treatment, and laboratory examination in histology, pathology and bacteriology of the eye. Further information may be had on request from the secretary, Dr. William H. Wilder, 122 South Michigan Avenue, Chicago.

FOREIGN

Deaths from Plague.—February 18, it was reported from Buenos Aires that in the seven preceding days there had been three deaths from bubonic plague.

Influenza Increases.—During February there was reported to have been a great increase in cases of influenza in Paris.

For the first three weeks in February, deaths from this disease were 284, 370 and 550.

War Hospital Closed.—The American Red Cross Hospital at Neuilly, organized in the first week of September, 1914, by a prominent American, and one of the most conspicuous establishments in caring for the wounded during the war, was closed, February 6.

Mission to Roumania Leaves Constantinople.—The American Red Cross Mission, which is headed by Dr. H. Gideon Wells, Chicago, consisting of forty-nine members, left Constantinople for Constanza, February 16, with 4,000 tons of relief supplies. These supplies were supplementing three boatloads of foodstuffs already sent to Roumania by the American Food Administration. The American Red Cross has 10,000 tons of additional foodstuffs, medicine and clothing on the way to Roumania.

Typhus Fever in Moscow.—Advices to the state department of Helsingfors state that twenty French physicians, twelve British, seven Belgian, five Italians and one American comprise a party of war relief workers that has returned from Moscow to Stockholm. They reported that there are 1,000 cases of typhus fever in Moscow, weekly, that hospitals are unable to take care of patients, many having to lie in halls without beds, and that the personnel of hospitals are largely incapacitated because of illness.

Proposed Merging of Danish Medical Societies.—Professor Rovsing of the University of Copenhagen, editor in chief of the *Hospitalstidende*, has offered this weekly as the organ of the united medical societies, urging that the medical societies of Denmark merge to form a single association. The Copenhagen Medical Society held a special meeting in November at which the plan was adopted, with forty-two ayes to two noes, that the Danish medical societies merge to form one Danish medical society, and to select the *Hospitalstidende* as its organ. The Alm. Danske Lægeforening has its own journal, the *Ugeskrift for Læger*. Both of these weeklies are regularly indexed in the Current Literature Department.

Red Cross Hospital Closed.—The American wounded in England are being evacuated to the United States so rapidly that it has been possible to close a number of the hospitals. American Red Cross Hospital No. 23 (St. Katherine's Lodge) has already been closed, and among the others that will soon be closed are American Red Cross Convalescent Hospital for Officers, at Lingfield Surrey, American Red Cross Hospital No. 21 at Paignton, North Devon, and army hospitals built by the American Red Cross at Romsey, Hursley and larger base hospitals at Portsmouth, Dartmouth and Tottenham. Sarisbury Court, Southampton, and two military hospitals at Liverpool will be the only American hospitals in Great Britain to be conducted through the winter.

Deaths in the Profession Abroad.—Dr. **Alois Epstein,** professor of children's diseases at the German University of Prague and chief of the children's clinic and foundlings' asylum.——Dr. **L. Stieda,** formerly professor of anatomy in turn at the universities of Dorpat, Königsberg and Giessen, aged 81.——Dr. **W. Anton,** professor of otorhinology at the German University of Prague, aged 58.——Dr. **Galcerán Granés,** professor of nervous and mental diseases at the University of Barcelona, and member of the editorial staff of the *Gaceta Medica Catalana*.——Dr. **S. M. Palomino,** subdelegado de medicina at Madrid, and editor of the *Monitor Sanitario*.——Dr. **V. Cervello,** professor of materia medica at the University of Palermo, noted for his work on the paraldehyds, adonis and iron, and founder of the *Archivio di Farmacologia e Terapeutica*, aged 64.

SOUTH AND CENTRAL AMERICA AND WEST INDIES

New Chief of Public Health Service in Venezuela.—Dr. L. G. Chacin Itriago of Caracas has recently been appointed director of the Oficina de Sanidad Nacional of Venezuela.

Death of Professor Pereira.—Dr. Miguel Pereira, professor of clinical medicine at the University of Rio de Janeiro; in 1910 president of the Academia Nacional de Medicina; leader in the Saneamento do Brazil movement, and author of numerous works on internal pathology and clinical medicine, died recently after a long illness, aged 47. Nearly the whole issue of the *Brazil Medico* for December 28 is devoted to obituary notices and tributes to Dr. Pereira spoken in the senate, the chamber of deputies and at the inauguration of the new building of the local medical society, which was deprived of all festival character by the loss of this prominent member.

MEXICO LETTER

MEXICO CITY, Feb. 16, 1919.

Interchange of Professors and Students

The Associated Press has given out word that the arrangements have been concluded for the establishment of the interchange of professors and students between the University of Washington and the University of Mexico. Special attention is to be paid to the study of the language, history and evolution of the two countries for the purpose of stimulating mutual acquaintance and cultivating friendly relations between the two nations.

Effects of Alcohol

On a single day recently sixteen persons were sent to the public insane asylum, the Manicomio General, affected with mental derangement of different kinds, all of which were attributed to the abuse of alcohol. The horrifying feature of the event was that all of them were youths, none having reached the age of majority, and the youngest was only 12 years old.

Personal

Sr. E. L. Vallejo, a veterinary physician, has recently been elected a member of the Sociedad Mexicana de Geografia y Estadistica, one of the oldest scientific bodies of the country. His address on being received a member was entitled, "Historical and Geographic Data on Anthrax and Its Preventive Vaccine in the Republic of Mexico."

Prosecution of a Quack

In the city of Guadalajara, Jalisco, a man has been apprehended—and it is the first time this has occurred, to my knowledge—for practicing medicine without having conformed to the legal requirements. The name of the accused is Felipe Ochoa. A petition was presented to the legislature of the state of San Luis, signed by a number of professional men, urging the passage of a law to regulate the practice of the liberal professions, and to exclude the unqualified from practice. The legislature to date has not taken any steps to remedy the grave evil of allowing charlatans to practice unmolested, an evil which affects nearly the entire country.

The Wassermann Reaction

For some unexplained reason, the aim and purpose have been missed of the new ordinance compelling the production of a certificate of health as an indispensable prerequisite to marriage, the certificate to be based on the negative findings of the Wassermann test. At present, the candidate has only to present a certificate based solely on the clinical findings, which is far from being an efficient guarantee of safety. Some of the sensational periodicals undertook a campaign against this beneficent ordinance and published articles inspired by physicians either unscrupulous or behind the times in which they sought to convince the general public that the Wassermann reaction has absolutely no diagnostic value.

LONDON LETTER

LONDON, Feb. 5, 1919.

Treatment of Disabled Soldiers

A scheme for the treatment of disabled soldiers has been drawn up by Sir John Collie, director of the medical service to the ministry of pensions. All the types of cases have already been dealt with at an earlier stage by the army medical service, which has equipped and staffed special hospitals and originated special teams of research workers. At the present rate of demobilization, ample room exists in the military hospitals for pensioners. Consequently the ministry of pensions will not embark on a scheme of separate hospitals—which, indeed, it could not staff at this moment. It has been the policy of the ministry of pensions to work as a civil rather than as a military organization. The discharged disabled soldier resents military discipline, and cannot feel the same confidence in a body presided over by military men as in a body presided over by civilians. To overcome this difficulty it is proposed to appoint a liaison officer to the pensions ministry to work between the director-general of the army medical services and the director of medical services of the ministry of pensions. As the military hospitals are demobilized they can be taken over by the ministry of pensions. But there must be continuity of treatment. The war has provided a medicine and surgery of its own, and physicians in large numbers have been trained in new methods. Orthopedic methods are now universally looked on as necessary to the proper handling of disablement.

The army possesses splendidly equipped orthopedic hospitals and workshops, and practically controls the physicians and nurses qualified to undertake this work. These physicians and nurses should become in time the staff of the ministry of pensions so that the work can be carried on into civil life. In the same way diseases like malaria, dysentery and trench fever have been specially provided for, specially studied and specially controlled. Teams of workers have learned how to recognize these diseases, how to prevent their spread, and how to treat them. The civilian medical profession as a whole knows little or nothing about them. These teams and their special hospitals must gradually be taken over as going concerns by the ministry, as much in the interests of the civil population—to prevent the spread of infection—as of the men themselves.

The Treatment of Dysentery in the Army

There are a large number of cases of dysentery in the military hospitals in this country contracted on service in the eastern theaters of war. For their treatment and the prevention of the spread of the disease to the civilian population an important army council instruction has just been issued. It provides in the fullest possible way for the care of the dysentery cases. It orders that "all patients suffering or convalescent from dysentery will, if fit to travel, be sent to one of the selected dysentery hospitals, where they will be examined, treated, and disposed of." These special hospitals must have on their staffs a bacteriologist and a protozoologist, and the cases are to be in charge of medical officers specially selected for their experience in or aptitude for the work, and as few changes as possible are to be made in these appointments. On admission of a patient to a selected hospital, steps will be taken at once to verify the diagnosis of dysentery and to exclude the possibility of the man being a carrier of the disease. A standing medical board is to be appointed at the Central Dysentery Hospital (Addington Park Military Hospital), one of the members of which shall belong to the laboratory staff of the hospital. The duty of this board is to make periodic examinations of all carriers and of such severe or relapsing cases as may have been transferred to the central hospital from the other special hospitals. Every "healthy" or "uncured" amebic carrier who elects to be discharged while still a carrier will be required to sign a paper stating that his condition has been explained to him and that he has been offered and has refused a course of specific treatment. The high percentage of recoveries after specific treatment properly administered will be explained to each man. On the discharge from any hospital of an uncured or chronic case of dysentery (amebic or bacillary) or any bacillary carrier, a notification shall be sent on or shortly before the date of discharge to the medical officer of the local government board. This note shall give the man's name, his age, address, date and place of original attack of dysentery, and history of relapses, summary of bacillary and protozoologic findings, with dates and note as to emetin or other specific treatment received.

German Brutality to a Prisoner

A coroner's inquest into the death of Private Robert William Varder of the Northamptonshire Regiment, a repatriated prisoner from Germany, exemplifies the abominable inhuman treatment to which many of our soldiers have been subjected. The father of the deceased gave evidence that his son joined the army in September, 1914, when under age, being 5 feet 11 inches in height and weighing over 11 stone (more than 154 pounds). He was an athlete. When the witness saw him in the Fulham Hospital, January 2, after returning from Germany, he was so emaciated and completely changed that if the sister had not pointed him out he would not have known him. His son had not received any of the many parcels that had been sent to him. He had had no medical treatment, and the only food he had was when they went out and gathered potato peelings, and worm-eaten cabbage leaves, which had been thrown away. No other food was provided for him. The coroner said that Varder had given this account to the army surgeons who attended him in this country: He was taken prisoner by the Germans last April, and was released about the date of the armistice. While at work in a prisoners' camp behind the German line in Belgium, he failed to interpret an order of a German sergeant, who then struck him a fatal blow with the butt end of a rifle. He was very emaciated and was not allowed to go sick. A large abscess formed as the result of the blow. Blood poisoning set in and caused his death. The coroner produced photographs of Varder taken before his capture and since his return from Germany. Formerly he weighed 12 stone (168 pounds), and when repatriated only 4 stone (56 pounds), being practically skin and bone. Capt. A. Leakey, R. A. M. C., of the Fulham General Hospital, gave evidence that when admitted Varder was emaciated and feeble. He had a large abscess on the thigh, which was consistent with his having received a blow. Varder had told him that the abscess was opened without an anesthetic, and a pint and a half of pus removed. The only attention he had afterward was from a soldier. In reply to the coroner's question, Would the operation be a painful process? he said, "Extremely, and from a surgical point of view barbarous." When Varder arrived in England the wound was 10 by 3 inches and was still open. He was too ill for an operation. There would have been nothing serious in the injury if he had been properly treated. The jury returned a verdict that death was due to blood poisoning, following a blow with the butt of a rifle inflicted by a German guard, and that death was accelerated by gross neglect on the part of the German military authorities in not affording him proper nourishment and treatment.

Medical Graduate Course in London

The Interallied Fellowship of Medicine has arranged with the medical schools in London for "an emergency post-graduate" course of three months for qualified physicians belonging to the medical services of the Royal Navy, Army, Air Force, the overseas contingent, the United States and Allies. Officers joining the course will be admitted to the general practice of the hospitals, including the clinical work of the wards and outpatient departments, clinical lectures and demonstrations, postmortem demonstrations and laboratory work. Tickets for the whole course, or for one or two months, are issued at the rate of $17 for each month. They can be obtained from the secretary of the fellowship, 1 Wimpole Street, London, W. I.

PARIS LETTER

PARIS, Feb. 6, 1919.

Treatment of Syphilis in the Army During the War

This subject was discussed at a recent meeting of the Société française de dermatologie et de syphiligraphie. Dr. Leredde, chief of the laboratory of the hôpital Saint-Louis, considers the methods of treatment of syphilis advocated by the Service de Santé militaire as being inefficacious. He believes that of the 200,000 to 300,000 persons who contracted syphilis during the war, three fourths remain actively syphilitic and spread the disease. He has discovered many cases of undetected syphilitic chancres, and a large number of persons who even after treatment had a positive Wassermann and who were capable of transmitting the disease.

Dr. Clément Simon protested against exaggerating the figures. In 1916, the army authorities reported 9,000 cases of syphilitic chancres. Multiplying these figures by five gives a total of 45,000 cases reported during the war. Adding to this number the unrecognized and not reported cases, it is safe to say that 90,000 cases may be considered the maximum figure.

Dr. Brocq, who with Dr. Thibierge, was consulted by the undersecretary of state for the Service de Santé militaire in 1915 as to the method of treatment of syphilis to be adopted, advised that it was not so important to give a thorough course of treatment as it was to "blanch" the syphilitics rapidly. Therefore, physicians were advised to use arsenic compounds, such as arsphenamin.

Dr. G. Thibierge was of the opinion that if any syphilitics remained undetected, it was due to the fact that the army surgeons did not make the regulation medical inspections systematically. A patient with a syphilitic chancre should not remain hospitalized more than six weeks. In the American army persons with chancres are not hospitalized. He believes that it was wrong, at the beginning of the war, to hospitalize the gonorrheics.

Health of Lille During the War

At the last meeting of the Académie de médecine, Dr. Calmette, director of the Institut Pasteur de Lille, denounced the acts of cruelty committed by the German army and nation on the inhabitants of Lille. He cited most convincing figures in support of his remarks. In 1915, the mortality rate of Lille was 27 per thousand inhabitants; in 1916 it was 29 per thousand; in 1917, 30 per thousand, and in 1918 it was 41.55 per thousand. The principal causes of this high mortality were tuberculosis, dysentery, scurvy and heart

disease. All diseases caused or aggravated by insufficient food rations also increased the mortality rate. Nor is this the only result of these acts. Young boys and girls have not developed normally; hence immediate steps should be taken to remedy these conditions. Calmette addressed an urgent appeal to the authorities to adopt urgent remedial measures at once, distributing substantial food to the children and the young, giving constant medical care, fighting tuberculosis in every possible way, both by notification and by treatment.

Transport of Wounded by Aeroplane

It is interesting to report the first trial of the plan of transporting the wounded by aeroplane. General Paeymirau was recently wounded on the Moroccan front, a shell fragment striking him in the region of the heart. He was transported by aeroplane to Bou-Denib in eastern Morocco on the Algerian front, thus avoiding the shaking to which automobile transportation would have subjected him.

Closing the Netherlands Hospital in Paris

A farewell dinner was tendered to Dr. Van Tienhoven, medical chief of the Netherlands Hospital of Pré-Catelan, and to all his assistants, as well as to the personnel of Auxiliary Hospital No. 77, established in the early months of the war by the Hamburger brothers. In the course of remarks made on that occasion, M. Loudon, formerly minister of foreign affairs for Holland, called attention to the fact that this hospital had cared for 1,658 wounded, with 121,066 hospital days, and that Auxiliary Hospital No. 77 had cared for 1,024 wounded with 46,304 hospital days.

War Welfare Work and Peace Reorganization

The representatives of most of the war welfare agencies recently met at the Musée social under the presidency of M. Leon Bourgeois in order to determine on the activities to be carried on now by these organizations, and to effect a reorganization for that purpose. War victims should receive the aid to which they are entitled and they should never be made to feel that this is a charity or in the nature of alms. A commission was appointed to devise ways and means to make this plan of cooperative action effective.

Society of Friends of the Paris Medical School

A society, called the Amis de la Faculté de médecine de l'Université de Paris, has been formed for the purpose of improving the methods of teaching in the University of Paris, the study facilities for the students, the scientific research laboratories, to favor the expansion of French medicine among foreigners, and to contribute to the advancement of medical science.

Students Celebrate Victory

January 26 an imposing demonstration was held in the Sorbonne by the Association générale des étudiants de Paris in celebration of victory. M. Paul Deschanel, president of the chamber of deputies, presided, assisted by M. L. Lafferre, minister of public instruction. The president of France and Mme Poincaré were present, likewise Dr. Louis Mourier, undersecretary of state for the Service de Santé militaire, and Dr. Roger, dean of the Paris faculty of medicine.

Closing the Canadian Hospital at Saint Cloud

On the occasion of the closing of this hospital a banquet was given and a reunion was held at which Dr. Louis Mourier presided, and which was attended by the Canadian delegates to the Peace Conference and the principal notables of the French and the English armies. Dr. Mourier thanked the Canadian doctors for their cooperation and their devotion to the French soldiers. More than 5,000 severely wounded soldiers have been cared for in this hospital as well as a large number of medical patients.

Medical Society of the Grand Duchy of Luxembourg

The Société des Sciences médicales of the Grand Duchy of Luxembourg on Jan. 12, 1919, voted unanimously to go on record as approving the medical studies and medical standards of France. They extended their felicitations to the French medical corps and to their colleagues of Alsace and Lorraine who are natives of the Luxembourg frontier.

Personal

The following persons have been appointed members of the Commission supérieure consultative de santé: Professor Letulle, Paris; Dr. Lagrange, Bordeaux; Dr. Léon Bernard, Paris; Dr. Abadie, Bordeaux; Dr. Crouzon, Paris; Dr. Levassort, secretary-general of the Association des médecins de France, and Dr. F.-V. Helme.

Deaths

Dr. Sabatié, chief physician of the complementary hospital of the Polytechnic School, is dead.

Dr. Henri Chéron, former chief of the obstetric clinic of the Paris medical faculty, died at the age of 50. He was born in Paris, the son of a gynecologist of repute, and had devoted himself particularly to roentgen and radium therapy. He was the founder of the Oeuvre philanthropique du radium, and was charged with the work of giving such treatment to the sick poor. He represented the radiotherapists at numerous French and international congresses.

Dr. H. Bernheim, honorary professor on the Nancy medical faculty, died in Paris. He was the author of a well known work on hypnotism besides many purely medical studies.

Raising the Birth Rate

The senate has concluded its discussion of a proposed law to combat depopulation by the adoption of appropriate measures tending to increase the birth rate. One of the provisions in this law bears on professional secrecy. It reads as follows: Physicians, midwives and pharmacists, who are called as witness in a prosecution for abortion, may, without laying themselves liable to article 378 of the Penal Code (which provides for imprisonment of from one month to six months and a fine of from 100 to 500 francs for revealing secrets which may have been confided to them either professionally or as agents of the state), testify to the facts in the case on trial, providing that they will not bring into the case any person, other than the accused, toward whom they are obliged to maintain professional secrecy. An added amendment exempts from punishment any woman who will make known the abortive maneuvers practiced on her, and who will cause the arrest of the person who performed the abortion. The senate also accepted an amendment providing for imprisonment of from six months to one year of any midwife who has in her possession or who has placed in the home of some one else the instruments used to perform abortion. The senate has adopted this law, but it has not yet been examined by the chamber of deputies.

Health Measures for Liberated Regions

The minister of the interior has appointed a commission, of which Dr. Louis Mourier is the head, to study and apply measures to conserve the health of the population of the liberated regions. Among the members of this commission are: Professors Chantemesse, Marfan, Netter and Widal, members of the Académie de médecine; Drs. Léon Bernard, Méry, Jules Renault and Sergent, physicians of the Paris hospitals; Dr. Roux, director of the Institut Pasteur de Paris, and Dr. Calmette, director of the Institut Pasteur de Lille.

Military Hydrotherapeutic Hospitals

Dr. Molinéry has suggested to the Société de médecine de Paris that the military hydrotherapeutic hospitals be reorganized, providing for laboratory, surgical and physiotherapeutic departments. He also suggested the appointment of a medical commission, consisting of outside physicians, by whom patients will be examined so that the proper hydrotherapeutic treatment can be outlined.

Marriages

WILLIAM HOWARD MICHAEL, Lieut.-Com., P. A. Surg., U. S. Navy, Washington, D. C., to Mlle. Marcelle Mortier of Neuf Chateau, Vosges, France, at Rouceaux, France, in January.

BENNET ROLAND PARKER, Lieut., M. C., U. S. Army, Chicago, on duty at Nantes, France, to Miss Edith Helene Matthies, at Nantes, January 27.

GEORGE ELKINGTON MOORE, Asst. Surg., Lieut. (j. g.), U. S. N. R. F., Madison, Wis., to Miss Louise M. Krôll of Brooklyn, February 12.

JOHN MARTIN WHALEN, Lieut., M. C., U. S. Navy, Grand Rapids, Mich., to Miss Arline Turpell, at Washington, D. C., February 4.

GEORGE FRANCIS BRACKETT to Miss Elizabeth Evelyn Cain, both of San Francisco, in Sacramento, Calif., February 15.

WALLACE KRUGLER to Miss Blanche Edith Ehrlich, both of New York City, February 11.

EDWARD BENEDICT MALLOY to Miss Sadie Steinmetz, both of Akron, Ohio, February 25.

Deaths

James Tyson ✠ Philadelphia; University of Pennsylvania, Philadelphia, 1863; aged 77; professor of pathology and morbid anatomy in his alma mater from 1876 to 1889; secretary of the medical faculty from 1877 to 1888, and dean from 1888 to 1892; professor of practice of medicine from 1899 to 1910; and since that time emeritus professor; president of the Medical Society of the State of Pennsylvania in 1911; president of the Association of American Physicians in 1907-1908; and of the College of Physicians of Philadelphia from 1907 to 1910; author of numerous monographs and textbooks, the most notable of which are those on "Practical Examination of Urine," "Physical Diagnosis," and "Textbook of Practice of Medicine"; at one time assistant editor of the *Philadelphia Medical Times;* pathologist to the Philadelphia General Hospital from 1870 to 1872; visiting physician since 1872; and president of the medical board from 1886 to 1890; consulting physician to the Kensington Hospital for Women; one of the incorporators, a trustee and chairman of the executive committee of the Rush Hospital for Consumption and Allied Diseases; acting assistant surgeon, U. S. Army, during the Civil War; died at his home, February 21.

Clarence Ewen ✠ **Major, M. C., U. S. Army** (retired), Washington, D. C.; Bellevue Hospital Medical College, 1862; aged 75; assistant surgeon of the 53d New York State Volunteers in 1862; assistant surgeon of the 102d United States Volunteers in 1862 and 1863; acting assistant surgeon, United States Army, 1864; assistant surgeon of the 29th United States colored troops in 1864 and 1865; acting assistant surgeon, United States Army, in 1868; who entered the regular establishment as lieutenant and assistant surgeon in 1868, was made captain in 1869, promoted to major in 1889, and was retired at his own request after more than thirty years' service, Jan. 26, 1897; died at his home, January 6.

James Madison Gora Carter ✠ Los Angeles; Northwestern University Medical School, Chicago, 1880; aged 75; formerly of Chicago and Waukegan, Ill.; president of the Illinois State Medical Society in 1897 and 1898; a veteran of the Civil War, and a prisoner in Libby prison; professor of pathology and hygiene from 1891 to 1895; professor of clinical and preventive medicine from 1895 to 1899, and professor emeritus since 1900, in the College of Physicians and Surgeons, Chicago; a member of the American Academy of Political and Social Science, and the American Historical Association; died at his home in Los Angeles, March 3.

Leonard Michael Kalaher ✠ **Lieut., M. C., U. S. Army,** Jersey City, N. J.; Fordham University, New York City, 1915; aged 27; who at his entrance into the service served at Fort Oglethorpe, Ga., and then after courses of instruction at Bellevue Hospital and the Rockefeller Institute, New York City, was sent to Camp Greene, N. C., and later to the base hospital at Fort McHenry, Md., and overseas to serve with the American Expeditionary Forces; died at U. S. Base Hospital No. 78, Toul, France, February 5, from pneumonia.

John James Mott, Statesville, N. C.; Jefferson Medical College, 1866; aged 84; a member of the legislature in Catawba County in 1866 and 1867; president of the Western North Carolina Railroad from 1868 to 1872; collector of internal revenue for the sixth district of North Carolina from 1872 to 1882; for several years president of the Statesville Air Line Railway Company, and since 1912 president of the Radford (Va.) Water Power Company; died at Radford, January 28, from disease of the heart and bladder.

William Frederick Mittendorf ✠ New York City; College of Physicians and Surgeons in the City of New York, 1873; aged 74; a specialist in ophthalmology; a member of the American Academy of Ophthalmology and Otolaryngology, American Ophthalmological Society and New York Academy of Medicine; consulting ophthalmologist to St. Mark's Hospital, and ophthalmic surgeon to the Nursery and Child Hospital, New York City; died at his country home in Crugers, N. Y., February 14.

Mary E. Walker, Oswego, N. Y.; Syracuse (N. Y.) Medical College, 1855; aged 86; lieutenant and assistant surgeon, U. S. Army, during the Civil War; awarded the Congressional medal of Honor for "bravery and valuable services in the field." noted as a dress reformer and advocate of equal suffrage; died at Bunker Hill, near Oswego, February 21.

Samuel G. Stewart, Topeka, Kan.; Starling Medical College, Columbus, Ohio, 1873; aged 73; a member of the Kansas Medical Society; chief of the medical staff of Christ Hospital, Topeka; consulting physician to the Topeka State Hospital; professor of principles and practice of medicine and clinical medicine in Kansas Medical College, Topeka; died at his winter home in St. Cloud, Fla., February 7.

Richard E. Hinman, Atlanta, Ga.; New York Homeopathic Medical College, 1889; aged 69; a member of the Medical Association of Georgia; a member of the faculty of the Atlanta Southern Dental College; for several years associate secretary and treasurer of the homeopathic board of the State Medical Examining Board of the State of Georgia; died at his home, February 10, from pneumonia.

Pierson Constantine Cope ✠ Braddock, Pa.; University of Pittsburgh, 1890; aged 58; a member of the staff of the Braddock General Hospital; died at his home, February 25, from the effects of a gunshot wound of the head, believed to have been self-inflicted, with suicidal intent, while despondent over impaired health after an attack of influenza and a cerebral hemorrhage.

Henry Reuben Weston ✠ **Lieut., M. C., U. S. Army;** University and Bellevue Hospital Medical College, 1903; aged 40; a member of the Association of Military Surgeons of the United States; who entered the Medical Reserve Corps in 1908, and had two tours of duty in the Philippine Islands; died, November 27, from gangrene of the lungs.

Alfred C. Goudy, Beach City, Ohio; Sterling Medical College, Columbus, Ohio, 1882; aged 58; for eighteen years a member and for several years president of the board of directors of the Stark County workhouse; local surgeon for the Baltimore and Ohio System; died at his home, February 9, from acute dilatation of the heart.

David Halsey Parliament ✠ **Lieut., M. C., U. S. Army,** Covington, Ga.; Georgia College of Eclectic Medicine, Atlanta, 1911; Atlanta (Ga.) School of Medicine, 1913; aged 35; professor of chemistry and urinalysis in the Georgia College of Eclectic Medicine, Atlanta; died at Camp Dix, N. J., October 2, from pneumonia.

Leo Cassius Miller ✠ **Lieut., M. C., U. S. Army,** Champaign, Ill.; University of Illinois, Chicago, 1906; aged 36; who served at Camp Greenleaf, Fort Oglethorpe, Ga., and was then ordered to the Embarkation Hospital, Camp Stewart, Va., in November, 1918; died at Champaign, December 14, from pneumonia following influenza.

James J. Beaton ✠ **Lieut., M. C., U. S. Army,** Waycross, Ga.; Atlanta (Ga.) School of Medicine, 1909; aged 31; who entered the Army at Camp Grant, Rockford, Ill., and was transferred thence to Camp Lee, Petersburg, Va., for special duty and later to Hoboken and Camp Merritt, N. J.; died at Camp Merritt, February 8.

George Hudson, Stillwater, N. Y.; Albany (N. Y.) Medical College, 1882; aged 68; a member of the Medical Society of the State of New York; a member of the village board of health, president of the village board of education, and for several terms president of the village; died at his home, January 30, from appendicitis.

Elias Cameron Crummey ✠ **Capt., M. C., U. S. Army,** Jesup, Ga.; Atlanta College of Physicians and Surgeons, 1905; aged 47; secretary of the Wayne County Medical Society from 1915 to 1917; on duty at Camp Wadsworth, Spartansburg, S. C., Died, November 26, from bronchopneumonia.

John Allen MacCormick ✠ Boston; Harvard Medical School, 1902; aged 45; assistant in the outpatient department of the Free Hospital for Women, Brookline, Mass.; visiting gynecologist to Tremont Dispensary, Boston; died in St. Elizabeth's Hospital, Boston, February 16, from uremia.

Thomas Goodglick ✠ **Lieut., M. C., U. S. Army,** Seattle; College of Physicians and Surgeons in the city of New York, 1916; aged 25; on duty with the Aviation Section, Signal Corps, in Oregon; died at North Bend, Ore., November 8, from bronchial pneumonia following influenza.

John Bishop Hazel, Hoopeston, Ill.; Hospital College of Medicine, Louisville, Ky., 1883; aged 69; a member of the Illinois State Medical Society and a specialist in diseases of the eye, ear, nose and throat; died at his home, January 20, from heart disease following influenza.

Harry D. Baldwin, Elyria, Ohio; New York Homeopathic Medical College, New York City, 1875; aged 64; at one time a member of the Ohio State Medical Association; a member of the staff of the Elyria Memorial Hospital; died at his home, February 25, from heart disease.

✠ Indicates "Fellow" of the American Medical Association.

Alexander Lowry Ivins ✠ Sayville, N. Y.; New York Homeopathic Medical College, New York City, 1911; aged 33; for several years surgeon of copper companies in Peru and Chile; died in King's Hospital, Bay Shore, L. I., N. Y., from pneumonia following influenza.

Albert S. Sherrick, Alverton, Pa.; Western Reserve University, Cleveland, 1885; aged 56; died at his home, February 11, from the effects of injuries received the day before, when he was struck by a street car while returning from making a professional call.

Charles Aubrey Bucklin, New York City; Bellevue Hospital Medical College, 1875; aged 64; instructor in diseases of the eye, ear, nose and throat in his alma mater in 1892; died at the home of his daughter in Glasgow, Scotland, February 13.

William P. Painter, Darby, Pa.; Jefferson Medical College, 1875; aged 76; for several years in the United States service; vice president of the First National Bank of Darby, and director of the Lansdowne Trust Company; died at his home, February 14.

William Glenn McKinney ✠ Pittsburgh and Pitcairn, Pa.; University of Pennsylvania, Philadelphia, 1894; aged 50; local medical examiner for the Pennsylvania Railroad; died at his home, about February 25, from pneumonia following influenza.

John Little, Jr., Tuscaloosa, Ala.; Tulane University, New Orleans, 1889; aged 77; a member of the Medical Association of the State of Alabama; vice president of the Federal Savings Bank, Tuscaloosa; died at his home, February 1.

George P. Blundell, Yazoo City, Miss.; Tulane University, New Orleans, 1875; aged 71; at one time a member of the Mississippi State Medical Association; a Confederate veteran; also a pharmacist; died at his home, February 12.

John Palmer Matthews ✠ Carlinville, Ill.; Marion-Sims College of Medicine, St. Louis, 1892; aged 51; local surgeon of the Q., C. and St. L. Railroad; died at his home, January 23, from septicemia due to an infected tooth.

Edward Benjamin Harrell, La Ceiba, Honduras, Central America; Tulane University, New Orleans, 1888; at one time sheriff of San Jacinto County, Texas; died at his home, February 6, from pneumonia following influenza.

Walter Wesley Rhyan, La Vina, Calif.; Starling Medical College, Columbus, Ohio, 1903; aged 46; formerly assistant physician and surgeon to the Esmeralda General Hospital, Goldfield, Nev.; died at his home, February 18.

Hiram A. Wood, Houston, Texas; Chattanooga (Tenn.) Medical College, 1895; aged 54; died in the Baptist Sanitarium, Houston, February 18, from the effects of burns accidentally received at his home, two days before.

Carlos E. Bowman, Alden, N. Y.; University of Buffalo, N. Y., 1883; aged 62; health officer and for several years president of the village and town of Alden; died in Escondido, Calif., February 7, from pneumonia.

Blaney William Cox ✠ **Lieut., M. C., U. S. Army,** Goldsboro, N. C.; North Carolina Medical College, Charlotte, 1915; aged 30; a specialist in neurology; died, October 8, from pneumonia following influenza.

Thomas A. Strasser, Reading, Pa.; University of Pennsylvania, Philadelphia, 1867; aged 73; at one time county physician of Lehigh County; died at the home of his daughter in Reading, February 16.

George Edwin M. Herbst, Friedensburg, Pa.; Jefferson Medical College, 1878; aged 61; for several years a representative from Berks County in the state senate; died at his home, February 17.

Joseph Mellor, Cleveland; University of London, England, 1861; aged 78; the first city milk inspector of Cleveland; who served in India during the Indian mutiny; died at his home, February 15.

Stephen D. Lyles, Wagoner, Okla. (license, Oklahoma, act of 1908); aged 60; at one time a member of the Oklahoma State Medical Association; died at his home, February 1, from heart disease.

George William Salter, Brooklyn; Eclectic Medical College of the City of New York, 1895; aged 68; was found dead in his office in Brooklyn, February 11, from heart disease.

Charles Edgar Holbrook ✠ **Lieut., M. C., U. S. Army,** Montreal, Que.; McGill University, Montreal, 1908; aged 33; died in the Royal Victoria Hospital, Montreal, October 18.

Alexander L. Pomeroy, Windsor, Ohio (license, Ohio, 1896); aged 96; at one time a member of the Ohio State Medical Association; died at his home, February 10.

George Jacob Stubenrauch, Chicago; University of Illinois, Chicago, 1910; aged 46; at one time a member of the Illinois State Medical Society; died at his home, February 23, from angina pectoris.

Lewis Henry Plimpton, Norwood, Mass.; Harvard Medical School, 1879; aged 68; a member of the Massachusetts Medical Society; died suddenly in Boston, February 21, from heart disease.

Frank Martin Dedaker ✠ **Lieut., M. C., U. S. Army,** Gloucester City, N. J.; University of Louisville, Ky., 1910; aged 31; died at his home, October 6, from pneumonia following influenza.

Harriet Hooton Hanna Hubbell, San Francisco; Cooper Medical College, San Francisco, 1890; aged 72; died at St. Luke's Hospital, San Francisco, February 16, from arteriosclerosis.

Henry Bobb, East Greenville, Pa.; University of Pennsylvania, Philadelphia, 1868; aged 72; died suddenly in the home of his daughter in Philadelphia, February 20, from heart disease.

Myron Levi Chamberlain ✠ Boston; Bellevue Hospital Medical College, 1867; aged 74; a medical cadet, U. S. Army, during the Civil War; died at his home, February 13.

John R. Elder, Bear Branch, Ind.; Kentucky School of Medicine, Louisville, 1905; aged 39; died at his home, February 20, from pneumonia following influenza.

James W. McCarty, Owensboro, Ky.; Louisville, Ky., Medical College, 1876; aged 70; a member of the Kentucky State Medical Association; died, December 31.

Eben W. Keeney, Newport, Ky.; Medical College of Ohio, Cincinnati, 1870; aged 70; a member of the Kentucky State Medical Association; died, December 4.

John Cleon Kerr ✠ **Lieut., M. C., U. S. Army,** Hazlewood, Pittsburgh; University of Pittsburgh, 1912; aged 31; died October 27, from bronchopneumonia.

Leonard Alling Shepard, Berkeley, Calif.; Miami Medical College, Cincinnati, 1873; aged 66; died at his home, February 17, from a nervous breakdown.

John R. Tuttle, Wheeling, Ind. (license, Indiana, 1897); aged 61; a practitioner for thirty-six years; died at his home, February 21, from nephritis.

Harold Ward Pyle ✠ Oberlin, Ohio; Cleveland Homeopathic Medical College, 1897; aged 47; died at his home, February 13, from heart disease.

Cecilius Calvert Steuart ✠ Baltimore; University of Maryland, Baltimore, 1882; aged 58; a specialist in pediatrics; died at his home, February 14.

William Creighton Bloomer, Cleveland; Starling Medical College, Columbus, Ohio, 1898; aged 49; died at his home, February 5, from pneumonia.

John Collier Laidley, Carmichaels, Pa.; University of Pennsylvania, Philadelphia, 1895; aged 50; died at his home, about February 25, from influenza.

John M. Campbell, Saginaw, Mich.; McGill University, Montreal, 1890; aged 71; died at his home, February 7, from disease of the stomach.

W. Sanford Kemp, Dayton, Ohio; Eclectic Medical Institute, Cincinnati, 1866; aged 75; died at his home, February 15, from heart disease.

John M. Suttles, Atlanta, Ga.; Southern Medical College, Atlanta, 1884; aged 69; died in a private sanatorium in Atlanta, January 28.

Henry S. Haskin ✠ Highland Park, Ill.; University of Michigan, Ann Arbor, 1872; aged 69; died suddenly at his home, February 16.

Daniel Bodifield, Cleveland; American Eclectic Medical College, 1878; aged 87; died at his home, February 5, from acute gastritis.

Sophronia A. Thomlinson, Shiloh, N. J.; Woman's Medical College of Philadelphia, 1878; aged 80; died at her home, February 14.

Alonzo Dow Husted ✠ Pittsburgh; University of Worcester, Cleveland, 1887; aged 63; died at his home, about February 25.

Jacob Ernest Brecht ✠ Fort Myers, Fla.; Washington University, St. Louis, 1874; aged 76; died at his home, January 6.

Irving Etienne Richard, Providence, R. I.; Jefferson Medical College, 1916; aged 27; died at his home, January 26.

Herbert H. Howe ✠ Yantic, Conn.; University of Vermont, Burlington, 1880; aged 65; died, February 4.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

EVADING A FRAUD ORDER?

Has "Orchis Extract" of the "Packers Product Company" Become "Organo Tablets" of the "Organo Product Company?"

Inquiries have recently come to the Propaganda department regarding the Organo Product Company, 11 West Randolph Street, Chicago, which sells "Organo Tablets" as a cure for "lost vitality"! When the first inquiries came in, no advertising matter accompanied them. Investigation showed that 11 West Randolph Street was the headquarters of a "men's specialist," one John G. Gill, long identified with Chicago quackery.

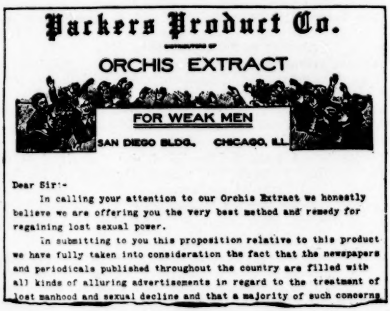
For several years Gill operated a medical mail-order fakery, known as "The Edson Institute," Chicago. He abandoned the business when the federal authorities began to make it uncomfortable. Later, he was connected with one Burgess, another advertising quack in Chicago, himself a hireling of a syndicate of quacks. Gill left Burgess after a few months, to take a position with a similar fakery, known as "Dr. White, Specialists." A reporter for the Chicago *Tribune*, a paper whose exposures of Chicago's quacks have made the "advertising specialist" business in that city a rather hazardous commercial undertaking, stumbled on to the "White" fakery and gave it some very unpleasant publicity. As a result "Dr. White"—which was not his name—left Chicago between days, owing John G. Gill $500. So, at least, Gill claimed when he was called before the Department of Registration and Education of the State of Illinois, to answer some rather pointed questions about his quackish activities. Further, according to Gill's testimony, he (Gill) brought suit against, and made a levy on the office fixtures left behind by White. These fixures were sold on attachment by the bailiff of the municipal court, and, according to Gill, were purchased by Fred A. Leach, from whom Gill claims he is buying them on the instalment plan.

This brings us to Mr. Leach. Some of our readers will remember that Fred A Leach operated the Packers Product Company, a mail-order fraud that sold "Orchis Extract," until it was put out of business by the government in April, 1918. Leach has been in the mail-order business for a good many years. He was manager of the "Distributors' Guarantee Association," against which a fraud order was issued in 1908; under the name of "Vacuum System" and "David Kuno" he sold vacuum developers for the alleged enlargement of the penis; and under the name of "The Ausin System" he also handled vacuum developers and later yet sold similar devices under the name of the "Wade Manufacturing Company."

These facts pointed to a probable community of interest between the "Organo Product Company" of 11 West Randolph Street, and its "Organo Tablets," and the fraudulent "Packers Product Company" and "Orchis Extract." Then came some of the advertising matter of the Organo Product Company. Even a superficial comparison of the circular letters and booklets used in exploiting Organo Tablets showed the close resemblance between this humbug and the government-declared fraud—Orchis Extract of the Packers Product Company. The wording of the letters and booklets is almost identical. Even an old testimonial for Orchis Extract appears (under a new address) for Organo Tablets. Compare, for instance:

TESTIMONIAL FOR ORCHIS EXTRACT	TESTIMONIAL FOR ORGANO TABLETS
"Mound City, Mo. *"Gentlemen:*—Enclosed find $2 for which please send me one more package of Orchis Extract. I think it is helping me so I am going to continue the use of it until I think I am cured."	"Louisville, Ky. *"Gentlemen:*—Enclosed find $2 for which please send me one more package. I think it is helping me, so I am going to continue the use of it until I think I am cured."

Doubtless when the facts detailed above are brought to the attention of the federal authorities, an investigation will be made. Then, possibly, it may be necessary to extend the fraud order issued against the Packers Product Company to cover the Organo Product Company.



Packers Product Co.

ORCHIS EXTRACT

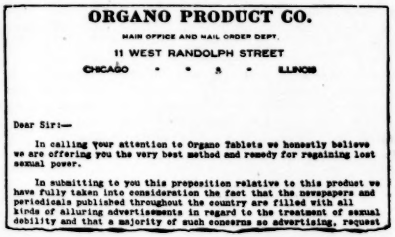
FOR WEAK MEN

SAN DIEGO BLDG., CHICAGO, ILL.

Dear Sir:-

In calling your attention to our Orchis Extract we honestly believe we are offering you the very best method and remedy for regaining lost sexual power.

In submitting to you this proposition relative to this product we have fully taken into consideration the fact that the newspapers and periodicals published throughout the country are filled with all kinds of alluring advertisements in regard to the treatment of lost manhood and sexual decline and that a majority of such concerns



ORGANO PRODUCT CO.

MAIN OFFICE AND MAIL ORDER DEPT.

11 WEST RANDOLPH STREET

CHICAGO - - 5 - ILLINOIS

Dear Sir:—

In calling your attention to Organo Tablets we honestly believe we are offering you the very best method and remedy for regaining lost sexual power.

In submitting to you this proposition relative to this product we have fully taken into consideration the fact that the newspapers and periodicals published throughout the country are filled with all kinds of alluring advertisements in regard to the treatment of sexual debility and that a majority of such concerns so advertising, request

Facsimiles (reduced) of part of two circular letters sent out by the Packers Product Co. and the Organo Product Co., respectively. Notice the similarity of wording. The Packers Product Co. was the name under which one Fred A. Leach operated a fraud to which the federal authorities denied the use of the U. S. mails. Leach is now located at 11 West Randolph Street, Chicago, which houses the Organo Product Co. and "Dr. Gill, Specialist."

DEPILAGIENE

"Depilagiene," or, to give it its full title, "Franco-American Hygienic Depilagiene," is one of a large number of toilet preparations put on the market by the Franco-American Company of Chicago. In a booklet issued by the Franco-American Hygienic Company, we read that "Depilagiene is an objectionable hair remover," which seems to be the concern's way of saying that it is a remover of objectionable hair. An original bottle of Depilagiene was submitted to the A. M. A. Chemical Laboratory for examination, and the chemists' reported as follows:

"The bottle of Depilagiene contained 18.5 grams of a pink powder having an odor resembling that of oil of citronella. Qualitative tests showed the presence of barium, sulphur, sulphid, sulphate, and small amounts of aluminum and calcium; aromatic oils and a red dye were also present. Essentially, the product is a mixture of barium sulphate, barium sulphid, sulphur and starch. A quantitative investigation of the active ingredient, barium sulphid, was made, and disclosed the presence of 22.6 per cent. of this drug. As commercial barium sulphid contains only about 50 per cent. of the pure chemical, Depilagiene probably contains approximately 45 per cent. of the commercial drug."

It will thus be seen that Depilagiene has no claims to originality, as practically all the chemical "hair removers" are composed of some form of sulphid. Naturally, the preparation is likely to cause more or less irritation of the skin, the amount depending to some extent on the way in which it is used, and to an even greater extent on the tolerance of the individual skin. Like all chemical depilatories, the use of Depilagiene must make the hair coarse.

Correspondence

ANILIN, RATHER THAN NITROBENZENE, AS THE POISON IN SHOE DYE

To the Editor:—More than the usual amount of interest seems to be manifested in the cases of poisoning from shoe dye reported from Camp Johnston, and it would appear to be in the interest of our records of the effects of poisons to determine definitely just what was the poisonous agent in this case. Being connected with a company engaged for many years in the manufacture of the several substances which may here come under suspicion, I have had to give some attention to the effects as manifested in workmen. The gross appearance of the blood as described did not impress me as suggestive of poisoning by a nitro compound (nitrobenzene) but as poisoning by anilin. The effects of both of these substances are quite similar, but the nitro compounds are more likely to bring about a destruction of the red cells and cause the blood to present the appearance of chocolate; while anilin is more likely, at least in its early stages, to cause the dark (asphyxiated) condition described. Anilin is quicker in its action and more quickly recovered from, but, more important from the standpoint of the present case, shows a particular predilection to penetrate leather and rapidly poison by skin absorption, so that we have been obliged to take special precautions regarding the shoes worn by anilin workmen. Both agents will cause cyanosis.

Nitrobenzene is widely used as a cheap perfume, and while it was probably present in some proportion in the preparation used by "Toney," I am tolerably confident that a chemical examination will show a much larger proportion made up of anilin, used as a solvent or mordant for the dye which gives the leather its desired color.

W. G. HUDSON, M.D., New York.
Medical Director, E. I. du Pont de Nemours & Co.

"A NEW TREATMENT FOR THE MORPHIN HABIT"

To the Editor:—The article by Dr. C. S. Bluemel on "A New Treatment for the Morphin Habit" (THE JOURNAL, Feb. 22, 1919, p. 552) is based on such unwarranted assumptions that it should not pass unnoticed. Dr. Bluemel states that (1) the "immunity" (tolerance) is probably due to the presence of an antibody or antitoxin in the blood, and that (2) physicians have come to believe that a definite antibody to morphin is formed in the blood, and that the unneutralized antibody is the cause of the withdrawal symptoms.

The first statement, so far as is known, is without any basis of fact. Alkaloids do not produce antibodies. This has been established by many investigators. It would be perhaps more in accord with the facts to say that many investigators have failed to find evidence that anything except protein produces antibodies. In view of this, if Dr. Bluemel has any definite evidence to the contrary he should have stated it in his article. Even when antitoxins are formed, they act only to neutralize toxins. They exert no direct action on the body cells (Ehrlich, Behring) and could therefore not account for the withdrawal symptoms of morphin. Now, it is quite possible that the view of Ehrlich and Behring is wrong. It is also unfair to ask any one to accept their opinion unqualifiedly; but the reputation of these men is such that those who disagree with them should give some basis more adequate than "purely theoretical considerations."

Dr. Bluemel has given no adequate support for his opinion. Physicians have no reason for this belief, and I am of the opinion that relatively few hold such a view.

The result of Dr. Bluemel's treatment is not under discussion, since it is quite possible to get good results from a wrong hypothesis. However, even if we grant his assumption and admit that saline solution will aid such cases, there is no reason for giving this intravenously. This method is much abused and should never be used except for sufficient reason. Salt solution is so rapidly absorbed from the gastrointestinal tract and so devoid of action on the intestine that there is little excuse for giving it intravenously.

HUGH MCGUIGAN, M.D., Chicago.

To the Editor:—The article by Dr. C. A. Bluemel on the treatment of the morphin habit is very interesting. The doctor has not given us statistics regarding the ultimate recovery of these patients from the disease of morphinism. This is the important point in the treatment of these cases. From personal investigations I know that withdrawing the drug from the patient is a simple process, provided the patient has been prepared beforehand by a few weeks' observation and preliminary reduction. What we are looking for in these cases is positive results. These are not obtained by one, two or three weeks of treatment, but rather by several months or years of careful observation and conscientious treatment of each individual case.

W. B. REED, M.D., Rochester, N. Y.

HARMLESSNESS OF GLASS IN DIGESTIVE TRACT

To the Editor:—Forty-five years ago I was called to attend one boy, aged 4 years, and two girls, aged 5 and 6, who had eaten corn bread with powdered glass in it. The bread had been prepared to kill rats. I gave an emetic, followed in one hour with boiled potatoes, till the stomachs of the children were filled. In one hour I gave castor oil. The potatoes were expelled by rectum thoroughly mixed with fine glass. The children all recovered without any untoward symptoms.

A. H. W. SULLIVAN, M.D., Miami, Mo.

To the Editor:—One morning I was summoned to the house of an aged and infirm patron, who was temporarily caring for two of her orphan granddaughters, who were about 14 years of age; they were cousins and almost inseparable. They were in agony, making effort to evacuate the bowels without success, referring the intense pain to the region of the rectum. On digital examination I found the sphincters closely contracted and a mass of gritty substance. After making sufficient digital dilatation I was enabled to remove several ounces of broken glass from the size of coarse sand to that of grains of corn, followed by some venous hemorrhage, which was of short duration. After a brisk cathartic a prompt recovery followed without untoward results. My curiosity was naturally aroused as to the motive for the ingestion of the glass and the manner in which it was done. The girls informed me that they had been reproved by their grandmother for being out on the streets late at night and had been forbidden to repeat the performance. Considering that life was not worth living if they were to remain housed up without privileges of the gaieties of the outer world, they formed a compact that they would destroy their own lives and would never be separated. The manner of accomplishing it was the puzzling question. They preferred poison, but knew it was impossible to procure any. One of them remembered hearing that feeding a dog with pounded glass incorporated in his food was sure death. They found two beer bottles and took them to a toilet in the rear of the dwelling. With a hammer they pounded the bottles on the floor as fine as they could in separate places, so that each might get an equal amount. They directed me to the place, where I found the unmistakable evidence. One of the bottles was bluish and the other transparent, corresponding with the glass I had removed.

G. J. C. WINTERMUTE, M.D., Celina, Ohio.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

MEDICAL EXEMPTIONS IN INCOME TAX

To the Editor:—Will you kindly inform me if roentgen-ray plates and replacement of roentgen-ray tubes can be deducted as business expense in the income tax report?

L. AMSTER, M.D., Atlanta, Ga.

ANSWER.—Roentgen-ray plates and tubes, while equipment, would come under the same head as drugs, bandages, etc., because they are constantly breaking and have to be replaced. The cost of roentgen-ray machinery would, of course, be an investment, but the upkeep of the machine and the cost of replacement of material would be an expense.

To the Editor:—1. I noticed your editorial on preparing income tax accounts. This has been exceedingly puzzling to me as I am an oculist doing refraction work, and, being situated inland, have to furnish the glasses for my patients. The "glasses" are merchandise, and I am supposed to report the merchandising profit on the glasses besides any professional charge that I may incorporate in the total charge for the glasses, keeping the two items separate. I am not able to do so. What should I do? 2. Please advise what annual depreciation you would think fair on a medical library, surgical instruments and office furniture and fixtures.

J. C. MCALLISTER, M.D., Ridgway, Pa.

ANSWER.—1. If your bookkeeping methods do not enable you to separate the mechandising profit on glasses furnished patients from your charges for professional services, you will have to make an estimate, as nearly accurate as possible, for the 1918 return. It would be advisable, however, to modify your bookkeeping methods so as to separate these items in the future.

2. The maximum annual depreciation of an article should not be greater than the original cost of the article, divided by the number of years it can be used. A physician's library is a permanent investment, and is not supposed to wear out or become useless; therefore, no depreciation could be estimated. Depreciation on instruments, furniture and fixtures should be the original cost divided by the number of years in which they can be used, or are of any value.

To the Editor:—May I suggest publication of the following example, issued by a local banking institution to aid physicians who are having difficulty in making their income tax statements.

A. R. C.

ANSWER.—The example follows: George Lee is a physician supporting a family consisting of his wife, two children under age and two over 18 years of age. He owns an automobile which he uses both in his professional work and for pleasure, fully three fourths of its use being for business. During 1918 the cost of running the automobile, including the salary of his chauffeur, was $1,456; gasoline, repairs and other expense, $1,638.25; insurance, $53.85. The depreciation of the automobile is estimated at $150, one tenth of its original cost. During the year the doctor spent $437 for club and lodge dues, entertainment, etc., which he charges to an account called "good will promotion." To the same account he charges $200 which he donated to the local charity organization and $17 which was his expense on a short trip to give a free lecture for a local Y. M. C. A. He spent $460 during the year attending medical conventions, $36 for medical journals and dues for medical societies, and $300 for books and instruments of a permanent value. His office and traveling expenses were $14,948.40 for the year. His professional fees amounted to $30,653 for the year, and in addition he received $419.30 as compensation for a short period which he served in the army before the armistice. He spent $600 for uniforms, equipment, etc., when in the army. Dr. Lee also owned a house which he rented during the year for $1,356. The expenses for repairs, insurance, etc., on this house were $16.06, and the depreciation is estimated at $200. The taxes on this rented property and on the home of Dr. Lee amounted to $509.19. The doctor's wife received $95 as interest on a mortgage. How will Dr. Lee report his net income? Answer: The gross income from services will include the professional fees, amounting to $30,653, but not the compensation received in the army. From this will be deducted the office and traveling expenses, three fourths of the automobile expense and depreciation, expenses of attending conventions, and the cost of medical journals and societies, a total of $17,917.97, making his net income from services $12,735.03. The club dues, etc., and the cost of army equipment are personal expenses. The cost of books and implements is not deductible, but the doctor should carry a property account and charge off a depreciation and obsolescence allowance on such property. The net income from the rented property is $1,139.94. The interest on Mrs. Lee's mortgage will be included on the doctor's return. The taxes will be deducted as will the $200 charitable donation. The $17 is deductible because it was an expense and not a donation, although incurred in a charitable enterprise. The total net income was therefore $13,085.78, on which the normal tax, deducting the $2,400 exemption, is $1,042.29, the surtax $244.29, and the total tax is $1,286.58. Adding the $5.70 normal tax on the income of Mrs. Lee, the total tax as shown by the return is $1,292.28.—1919 Federal Income and War Tax Laws, Halsey, Stuart & Co.

CREEPING ERUPTION: LARVA MIGRANS

To the Editor:—I have a patient who has a parasitic skin disease due to a burrowing animal parasite. The track of the parasite is plainly visible as a very fine red line under the horny layer. It seems to work mainly at night, when an intense itching takes place. At the end of the track is a slightly elevated papule. I should be glad to have you inform me as to the name of this parasite. I have recently seen two patients similarly infected, one on the dorsal surface of the left thumb, and the other on the anterior surface of the left thigh. I have employed tincture of iodin with indifferent results, the iodin serving mainly to stop the working of the parasite, when after a period of quiet it would resume its excursions again.

A. E. CONTER, M.D., Apalachicola, Fla.

ANSWER.—This condition is also known as larva migrans, and is produced by the wandering in the skin of a larva which leaves behind it an inflammatory track. The larva wanders indefinitely under the skin and produces a narrow red line which is slightly raised. It usually travels at the rate of an inch or more a day. The direction is not regular. The most active part of the line is the advancing end. The larva itself is usually found a quarter of an inch or more in advance of the active advancing end of the line, and is denoted by itching or burning. The treatment consists in destroying the larva. Hutchins, in the *Journal of Cutaneous Diseases*, 1906, suggested the injection of cocain solution followed by the injection of one or two drops of chloroform, the needle being inserted behind the advancing end of the track and pushed forward to the probable location of the parasite. Stellwagon cured several cases by incision with mercuric chlorid and the application of a minute quantity of nitric acid to the suspected site of the parasite. A general discussion of the subject appeared in THE JOURNAL, Jan. 15, 1916, p. 172, in an article by Knowles.

A Great Responsibility on the Profession.—According to the regulations of the Ontario (Canada) License Board, a duly qualified medical practitioner is legally entitled to carry in his house or in his office 10 gallons of liquor. He can procure 1 quart for medical practice from any qualified druggist, or he can purchase from a vendor or distiller any quantity up to 10 gallons. When the physician in his judgment considers a larger quantity of liquor necessary for his patient than the prescribed 6 ounces, he can issue a prescription for 1 dozen bottles of ale, beer or porter containing not more than three half pints each, or 1 quart of wine or distilled liquor, which can only be procured from one of the seven vendors of Ontario. None of the foregoing liquor mentioned can be legally used for beverage purposes. All the provisions mentioned for procuring liquor are absolutely for medical use only.—From the *Canadian Practitioner and Review.*

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, April 1. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.

CALIFORNIA: Los Angeles, March 17-20. Sec., Dr. C. B. Pinkham, State Capitol, Sacramento.

COLORADO: Denver, April 1. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: New Haven, March 11-12. Sec. Reg. Bd., Dr. Chas. A. Tuttle, 196 York St., New Haven; Sec. Eclectic Bd., Dr. J. E. Hair, 730 State St., Bridgeport, and Sec. Homeo. Bd., Dr. E. C. M. Hall, 82 Grand Ave., New Haven

DISTRICT OF COLUMBIA: Washington, April 9-11. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

IDAHO: Pocatello, April 1-2. Sec., Dr. Ray H. Fisher, Rigby.

IOWA: Iowa City, March 24-26. Sec., Dr. G. H. Sumner, Capitol Bldg., Des Moines.

MAINE: Portland, March 11-12. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

MASSACHUSETTS: Boston, March 11-13. Sec., Dr. W. P. Bowers, Rm. 501, No. 1 Beacon St., Boston.

MINNESOTA: Minneapolis, April 1-4. Sec., Dr. T. S. McDavitt, 741 Lowry Bldg., St. Paul.

MONTANA: Helena, April 1. Sec., Dr. S. A. Cooney, 205 Power Bldg., Helena.

NATIONAL BOARD OF MEDICAL EXAMINERS: Philadelphia, June 2-7. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.

NEW HAMPSHIRE: Concord, March 13-14. Sec., Dr. Charles Duncan, Concord.

NEW MEXICO: Sante Fe, April 14-15. Sec., Dr. W. E. Kaser, East Las Vegas.

OKLAHOMA: Oklahoma City, April 8-9. Sec., Dr. J. J. Williams, Weatherford.

RHODE ISLAND: Providence, April 3-4. Sec., Dr. B. U. Richards, State House, Providence.

UTAH: Salt Lake City, April 7-8. Sec., Dr. G. F. Harding, Templeton Bldg., Salt Lake City.

REPORT OF THE SIXTH EXAMINATION OF THE NATIONAL BOARD OF MEDICAL EXAMINERS

The sixth examination of the National Board of Medical Examiners was held in Chicago and New York, Dec. 2-19, 1918. The written examinations were held simultaneously in the two places. The laboratory and clinical examinations immediately followed the written examination at Chicago, while in New York this part of the examination was held from the 14th to the 19th of December. The subjects of the examination and the relative value of each were: anatomy, 100; physiology, 75; chemistry, 75; pathology, 75; bacteriology, 50; materia medica, pharmacology and therapeutics, 75; medicine, 200; surgery, 200; obstetrics and gynecology, 75; hygiene and sanitation, 50; medical jurisprudence, 25. A percentage of 75 was required to pass. Falling below 65 per cent. in two subjects, or below 50 in one subject, constituted a failure.

There were eighty-nine applicants who applied for examination. Seventy were found to have the essential preliminary and medical qualifications, but owing to the epidemic of influenza and to many candidates having been called into service, only sixteen appeared for examination, of whom fifteen passed and one failed. The following colleges were represented:

PASSED

Names of Candidates and Colleges	Year of Graduation
Ralph Herbert Eisaman, Northwestern Univ. Med. College	1918
Charles Edward Watts, Rush Medical College	1918
Robert Lee Kerrigan, Rush Medical College	1918
William Hart Elmer, Northwestern Univ. Med. College	1918
Arthur Spaulding McQuillan, Cornell Medical College	1916
George William Haan, Jr., Northwestern Univ. Med. College	1918
Barnet Edward Bonar, Rush Medical College	1918
Samuel Abraham Durr, Northwestern Univ. Med. College	1918
Willard David White, Rush Medical College	1918
John Albert Wilson, Columbia Univ. College of P. & S.	1917
Gilman S. Currier, Columbia Univ. College of P. & S.	1918
Arthur Teninga, Rush Medical College	1918
Russell John Callander, Rush Medical College	1918
Horace Ensign Groom, Rush Medical College	1918
Samuel Thomas Foster, Northwestern Univ. Med. College	1918

FAILED

Rush Medical School 1918

In the case of candidates from the Rush Medical School, the M.D. certificate is withheld pending the completion of the one year internship. For successful candidates who have not completed their intern year, the board's certificate is withheld pending the completion of that work.

The general average of candidates is based on subject values as rated by the board.

AVERAGES OBTAINED

Candidate's Number	Anatomy; Value, 100	Chemistry; Value, 75	Materia Medica, Pharmacology and Therapeutics; Value, 75	Obstetrics and Gynecology; Value, 75	Hygiene; Value, 50	Medicine; Value, 200	Surgery; Value, 200	Pathology; Value, 75	Bacteriology; Value, 50	Physiology; Value, 75	Medical Jurisprudence; Value, 25	Final Averages
1	70	90.6	80	76	50	83.5	81.25	80	66	89.3	80	789.5
2	90	96	84	92	58	89.5	86.5	86.6	66	86.6	72	856
3	73	93.3	77.3	89.3	55	78.5	85.25	66.6	70	93.3	72	796
4	59	98.6	68	80	55	67	85.25	74.6	66	93.3	48	747
5	74	93.3	82	89.3	73	78.5	88.5	78.6	74	96	80	831
6	90	96	82.6	93.3	80	89	88.5	86.6	76	88	96	882
7	85	96	80	89.3	88	84.5	89.7	92	86	97.3	68	878.5
8	71	92	74.6	70.6	66	84.5	88.7	88.6	64	93.3	76	816
9	73	96	84	89.3	90	85	91.5	88	80	89.3	80	866
10	72	90.6	82.6	70.6	52	82.5	84.25	86.6	74	89.3	68	800.5
11	65	93.3	81.3	80	73	78.5	86	84	74	88	96	811.5
12	80	93.3	85.3	80	87	85	82	87.3	80	85.3	80	841
13	70	93.3	84	76	80	89.5	86.5	87.3	80	76	80	834.5
1	85	80.6	89.3	85.3	85	84.5	81.5	88	84	89.3	68	844.5
2	76	84	80	76	85	82.5	83	87.3	74	86.6	72	815
3	80	80.6	89.3	76	50	85	79.75	85.3	76	93.3	92	815.5
General aver. by subjects	75.8	91.8	84.5	82	66.7	83	85.5	84.2	74.4	89.6	76.9	

EXAMINATIONS AND TIME ALLOWED

Subject	Kind of Examination	
	Written	Other, and Remarks
Anatomy	3 hours	Oral with prepared spec. 20 min. for each candidate
Chemistry	3 hours	Two hours laboratory in physiologic chemistry
Physiology	3 hours	Laboratory 2 hours
Pathology	3 hours	Laboratory exam., 20 min. each cand.
Bacteriology	2 hours	Laboratory 2 hours
Materia medica, pharmacology and therapeutics	3 hours	Laboratory 2 hours
Medicine	3 hours	Clinical lab., 1 hour each cand.; clinical med., 3 hours
Surgery	3 hours	Lab. op. surg. and applied anatomy, 3 hours; clin. exam., 3 hours
Eye, ear, nose and throat	.....	Clinical exam., 30 min. each candidate
Dermatology	.....	Clinical exam., 30 min. each candidate
Obstetrics and gynecology	3 hours	
Hygiene	2 hours	
Medical jurisprudence	2 hours	

Iowa December Examination

Dr. G. H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, Dec. 10-12, 1918. The examination covered 8 subjects and included 100 questions. An average of 75 per cent. was required to pass. Seven candidates were examined, all of whom passed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	(1917)	87.2
Hahnemann Med. Coll. and Hosp. of Chicago	(1919) 87.2,	87.2, 87.6
Loyola University	(1917)	85.6
St. Louis College of Physicians and Surgeons	(1910)	80.1
Vanderbilt University	(1916)	81.6

Iowa Reciprocity Report

Dr. G. H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports that 2 candidates were licensed through reciprocity at the meeting held Jan. 6, 1919. The following colleges were represented:

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Chicago	(1905)	Missouri
University of Pennsylvania	(1902)	Penna.

Book Notices

GASOLINE AND KEROSENE CARBURETORS: CONSTRUCTION, INSTALLATION, ADJUSTMENT. A Simple, Comprehensive Treatise for Practical Men, Explaining All Principles Pertaining to Carburetors for All Types of Internal Combustion Engines Intended to Operate on Liquid Fuels Such as Gasoline, Kerosene, Benzol and Alcohol; All Leading Types of Carburetors and Their Adjustment Are Fully Described. By Victor W. Pagé, M.S.A.E. Invaluable to Repairmen, Students and Motorists; Includes the Most Complete Exposition on Kerosene Carburetors Ever Published. Cloth. Price, $1.50. Pp. 206, with illustrations. New York: Norman W. Henley Publishing Company, 1919.

This is a simple treatise explaining basic principles pertaining to carburetion, and showing how liquid fuels are vaporized and turned into gas for operating all types of internal combustion engines intended to operate on vapors of gasoline, kerosene, benzene and alcohol. Several types of carburetors are described. Carburetion troubles, fuel system trouble, carburetor repairs and installation, and modern carburetor developments are considered in a thorough manner. This book will prove a convenience to physicians owning automobiles.

NEOPLASTIC DISEASES: A TEXT-BOOK ON TUMORS. By James Ewing, A.M., M.D., Sc.D., Professor of Pathology at Cornell University Medical College. Cloth. Price, $10 net. Pp. 1027, with 479 illustrations. Philadelphia: W. B. Saunders Company, 1919.

Since the very beginning of the study of tumors, the tendency has been to divide them into large groups or classes, and to regard representatives of the same group occurring in different places not merely as more or less closely related but as essentially identical and equivalent. We are in the habit of thinking of sarcoma as pretty much the same thing no matter what organ or tissue is involved primarily, and the same is true with regard to carcinoma and also other tumors. We have searched for one universal cause of cancer, and we speak commonly of the unknown cause of cancer as if there could be no question that malignancy is due to one definite, principal causative agent, which, of course, remains to be proved. In the efforts to devise simple, easily understood, and all-inclusive schemes for an orderly classification of tumors, the temptation naturally arises to subordinate and minimize many more or less obvious differences in the mode of origin and behavior of related but not identical or equivalent tumors. The centralizing point of view here indicated, the outcome largely of the influence of preconceived notions, is not conducive to progress, but tends rather to retard the growth of knowledge; it is therefore refreshing to find that the author of this new and imposing work on tumors has been under the spell of a larger and clearer vision. As indicated by the title—"Neoplastic Diseases"—tumors are here presented as specific diseases or clinical and pathologic entities, the essential facts in regard to which can be revealed fully only as intensive study is given to special forms and cases. The endeavor has been, to quote from the preface, "to analyze the numerous etiologic factors which meet in such diverse fashions in the inceptions of tumors, to emphasize the general dependence of clinical cause upon histologic structure, to trace the histogenesis to the last degree, impressing its essential importance when known, and to enumerate and contrast the more striking clinical features which are often highly characteristic of different tumors." We see that particularization rather than contemplation of general oncologic principles is the keynote. The contents are in two parts: The first, general oncology, occupies 148 pages and deals with historical matters, the matter of definition, malignancy, metastasis, chemistry and serology, theories in regard to cancer, special etiology, and experimental cancer research. The second part, special oncology, covers about 800 pages, and considers the particular forms of tumors and the tumors of the individual organs. There are extensive lists of references to the more important literature, and a large number of satisfactory illustrations almost wholly photographic; the microscopic structure of practically every form of tumor (except xanthoma) is reproduced. The title page states that this is a textbook on tumors; but it is much more extensive and detailed than the usual textbook, and it addresses itself especially to readers looking for complete information. It is a masterly production, the result of the earnest labor of many years; the style is lucid, fresh, vigorous; the discussion is extremely well advised, without bias, and adequate. There is, in fact, no other book that renders accessible in so well assimilated form so much knowledge in regard to the histogenesis and structure of all varieties of tumors.

THE HUMANE SOCIETY OF THE COMMONWEALTH OF MASSACHUSETTS: AN HISTORICAL REVIEW 1785-1916. By M. A. DeWolfe Howe. Boards. Pp. 398, with illustrations. Cambridge: Riverside Press, 1918.

The Massachusetts Humane Society published its first pamphlets in 1787, and has continued its work since that time. The present book is based on the publications of the society. It is a beautifully prepared volume both as to typography and illustrations.

The work of a humane society comes very near to that of the medical profession. A humane society was organized in Philadelphia in 1780. Dr. Benjamin Say was the president of this society in 1799, and Dr. Benjamin Rush of Philadelphia was an early honorary member of the Massachusetts society. In 1793 he sent the president of this society two pamphlets widely distributed in Pennsylvania, and from one of them the Massachusetts society published an extract in 1893 relative to avoiding the danger of drinking cold water while the body is heated. The instigator of the Massachusetts society was Dr. Moyes, the organization of the society being described in its articles published in 1786. The first president of the society was His Excellency, Governor Bowdoin, and Dr. John Warren was the second vice president. One of the first publications of the society concerned methods of treatment to be used with persons apparently dead from drowning. This included regulations relative to warming the body and securing a good air supply. Some of the directions are:

> No persons are to be admitted into the room but those who are actually employed in exerting their utmost endeavors for the recovery of the unfortunate; six persons are therefore the greatest number that can ever prove useful on such occasions; and those who are by-standers for the sake of curiosity should be requested to withdraw, as their presence may retard or totally prevent the restoration.
>
> The smoke of tobacco thrown up the fundament should be ranked among the earliest applications; if a fumigator should not be at hand, the common pipe will answer the purpose of applying this vapour to the bowels. So easy and important an operation should be repeatedly performed, as the good effects of tobacco smoke have been proved in many cases.

At the same time instruments were devised for inflating and extracting air from the lungs.

An interesting sketch of Dr. John Warren appears in the first chapter of the book, also one of Dr. Isaac Rand. In a diary kept by Dr. Ethan Elliott, a brother of Dr. Rand, is given a table of fees of that date, running from a visit 50 cents, to a consultation $1, double fees at night, capital operations in surgery £5, opening an abscess 50 cents, and extracting a tooth the same.

The first thirty years of the society's work were devoted chiefly to humane efforts attached to maritime interests. The records contain many accounts of the saving of persons from drowning and of rewards for such service, including also accounts of the establishment of life-saving stations along the shore. The third chapter is concerned with rescues and resuscitations, the greatest attention being given to the resuscitation of the drowned. This is an excellent description of the scientific development of such methods.

The society, however, did not devote itself entirely to such methods for the relief of humanity. In 1790 Rev. Jeremy Belknap, one of the founders of the Massachusetts Historical Society, proposed to the humane society the establishment of a foundling hospital, and a committee was appointed and recommended "a consultation with the Medical faculty, in order most effectually to provide 'for the sick-poor, for the assistance of lying-in women, and for foundlings.'" Through their efforts the Boston Dispensary was established in 1796. At a meeting in 1799 a prize of $50 was voted to be given "for the communication of the greatest number of important and well-substantiated facts instrumental in giving origin to the Yellow Fever in the United States." The paper which won the prize was that of Dr. Samuel Brown of Lexington, Ky.

These are but a few of the interesting points brought out in this historical review, which carries the work of the humane society up to recent date. While of chief interest to those having an actual part in the work, the volume will have interest for all others who believe that "it is a pleasant exercise of the imagination to look upon old things as new, to acquire the realizing sense that a long established institution was once precisely as new as the newest organization of the present year and month with all its work to be done and all its history and traditions to be made."

Social Medicine, Medical Economics and Miscellany

Report of International Health Board

The report of the International Health Board for 1917, just issued, shows that notwithstanding the war, infection surveys were conducted in Tobago, Cayman Islands, Papua; demonstrations in relief and control of hookworm disease were carried on in twelve states in this country and twenty-two foreign states and countries; a beginning was made in the control of hookworm in mines by conducting a preliminary infection survey in mines in China; there was cooperation with the American Red Cross and with the French government in measures for the control of tuberculosis in France; experiments were conducted in Arkansas and Mississippi for the purpose of testing measures for the control of malaria; the yellow fever commission carried on survey work in Martinique and Venezuela; there was established and put in commission a hospital ship to bring medical and surgical relief to the inhabitants of the Sulu Archipelago, Philippine Islands; also a department of hygiene in connection with the Faculty of Medicine at the University of São Paulo, Brazil, and the completion of a scientific investigation of hookworm disease in Malaya, a report on which was made by the commission sent in 1915 to make the study.

The most extensive work of the board consisted in the efforts against hookworm. Two general outstanding features were the general improvement in sanitation in the regions investigated through the enactment of legislation aimed at the prevention of soil pollution, and the great increase in public appropriations in support and extension of the work. Two general plans have been followed in the hookworm work, the dispensary of the movable sort, which reaches a large number of people and is important for its educational value, and the intensive plan, in which a small area is selected and efforts are made to reach every inhabitant. The latter method gives a practical demonstration, in a limited area, of the possibility of controlling hookworm disease in all infected areas. At the same time it points the way toward the ultimate control of other preventable diseases by similar methods of direct attack. Of the drugs used the experience has been that thymol and chenopodium are most efficacious. In an experience with 13,000 cases in the South Sea Islands, scarcely an untoward symptom was encountered. Seventy-three per cent. of the persons treated in the Fiji Islands were cured by two treatments. Six months after treatment, reexamination showed that only 10 per cent. were reinfected. In an experiment it was shown that one treatment with chenopodium had an efficiency of 96 per cent., as compared with 89 per cent. for thymol, 47 per cent. for eucalyptus and 27 per cent. for beta-naphthol. In some countries, however, alarming symptoms and sometimes death followed the administration of chenopodium. Smaller doses are recommended. The Uncinariasis Commission found that the efficiency of 99 per cent. obtained by a single treatment with 3 c.c. of the oil divided into three doses and administered at hourly intervals was reduced to only 95 per cent. when the dose was cut in half, and untoward results were rare. Magnesium sulphate has been found to be the most efficient purgative after the oil.

An extended review of the hookworm situation in the various countries is contained in the report, the other activities of the board being given space commensurate with the extent of the work done, as in the malaria control experiments in Arkansas, public health training in Brazil, yellow fever work, and the work of the hospital ship in Philippine waters.

Walcott's Work in Brazil

The *Revista Medico-Cirurgica do Brazil* relates that at a recent meeting of the Academia Nacional de Medicina of Brazil, Dr. Allen Walcott was a guest and was proposed for corresponding member of the Academia. He is chief of the medical service of the great railway through the interior of Brazil, the Madeira e Mamoré R. R., and director of the Hospital de Candeleria. His work was described by Dr. A. Peixoto as, "since the Panama Canal, the most important and humanitarian work that has been done by modern hygiene," adding, "The success obtained by prophylaxis through this vast and rich zone has wiped the stain of unhealthfulness from tropical climates." He remarked that Dr. Walcott's own appearance, ruddy and robust, after nearly nine years' work in this field, is the best of testimony to the fact that he has transformed the country *da pestilencia á salubridade*. In describing the work of the medical department of the railroad, Dr. Walcott referred to some of the difficulties encountered, saying that malaria, beriberi and diphtheria ravaged the country. "It was indeed one vast cemetery. Those who come to Porto Velho today can have no conception of what conditions were when we started the work in those inhospitable lands, where the biped entered only at the sacrifice of his life." His observation soon convinced him that the beriberi of the Amazons was the same as the beriberi of Panama, and that its primordial cause is a one-sided diet. He promoted the cultivation of fruit trees, vegetables and a diversity of cereals, poultry and stock raising, etc., distributing seeds lavishly, and beriberi has now practically disappeared, as in this indirect way the populace were no longer restricted to the diet of *farinha de agua* alone, as formerly. Porto Velho is now a place where one can live with some comfort. One of the other speakers, Dr. T. Torres, said that in his town Manáos, "scarcely any vegetables or fruit are cultivated, poultry is imported from a long distance, and cabbages are imported from Lisbon to be sold at Manáos, while the population in the interior live exclusively on turtle meat and porridge (*farinha de agua*). The butcher shops sell only turtle meat, fish, game and the worst kind of beef. It is a most salutary example that has been set by the medical department of the Madeira e Mamoré R. R. at Porto Velho, fostering the cultivation of cereals, vegetables and fruits."

[Dr. Allen Moore Walcott is a graduate of the medical department of the University of California (1907), and served for a time in the Panama Zone.]

Report of United Fruit Company

In the annual report of the medical department of the United Fruit Company for 1918, attention is called to the loss of twenty-three of the staff of physicians during the year to enter the military service of the United States, and to the difficulty of securing suitable men to supply their places. Malaria, as heretofore, was the chief medical or sanitary problem. In the prophylaxis and treatment the forces were handicapped on account of the difficulty of procuring quinin in sufficient quantities, owing to the military requirements and regulations. The hospitals and dispensaries of the company treated 20,075 cases of malaria, with fifty deaths. There were forty-one cases of hemoglobinuria, with seven deaths. In the latter trouble one of the district superintendents suggested and used glucose in connection with physiologic sodium chlorid solution, with apparently good results, and the method will be employed in other districts and hospitals. *Balantidium coli* was found in two cases of dysentery in the Costa Rica division, in the persons of two laborers caring for pigs, in which as the host this parasite is found. In Cuba, among Haitian laborers, there was an epidemic of pneumonia which was attended by a high mor-

tality. Seven cases of snakebite with two deaths, the snakes being the red viper and the water moccasin, were found in the Costa Rica division. Extensive sanitary work was continued in all the divisions, the work at Barrios, Guatemala division, being especially noteworthy. This was one of the most insanitary ports visited by the company's steamships. In connection with the International Railways of Central America it was cleaned up, and the condition with relation to mosquito infection is now greatly improved. One case of liver fluke (*Clonorchis sinensis*) was found in a Chinaman, and one case of mycetoma (Madura foot) and a number of cases of infestation with *Trichocephalus dispar* were reported. The company made an effort during the war to encourage the use of native foods, one instance being the use of boiled green banana pulp mixed with wheat flour dough in the making of bread, which effected a saving of from 25 to 30 per cent. of wheat. Physical examinations of all persons offering for employment resulted in the rejections of 7.8 per cent.

Eggs and Eggs

How to tell a bad egg is a question that has puzzled scientists, laymen and professional egg graders for many years, and it is evidently not yet a matter of mathematical accuracy. Any one can tell a bad egg after the shell is broken, but this is not the logical moment for the determination. The United States Department of Agriculture, through its Bureau of Chemistry, has published several interesting contributions on this subject (Eggs and Their Value as Food, Bull. 471, U. S. Dept. Agr. Bacteriological Study of Shell, Frozen and Desiccated Eggs, Bull. 158, Bureau of Chemistry. How to Candle Eggs, Bull. 565, U. S. Dept. Agr. Practical Suggestions for Preparation of Frozen and Dried Eggs, Circular 98, Bureau of Chemistry). The most recent study concerns accuracy in commercial grading of opened eggs. A previous bulletin of this department (A Bacteriological and Chemical Study of Commercial Eggs, Bull. 51, U. S. Dept. Agr.) described how eggs, good and bad, appear before the candle and out of the shell, and enumerated their respective chemical and bacteriologic characteristics. The most recent bulletin (Jenkins, M. K., and Hendrickson, Norman: Accuracy in Commercial Grading of Opened Eggs, Bull. 391, U. S. Dept. Agr.) is concerned with the grading of eggs by sight, smell and taste. It has been obseved that some eggs have a higher bacterial content than others. For instance, it has been found that 8.7 per cent. of eggs with sound shells contain bacteria, and that 18.6 per cent. of eggs with cracked shells and 30.7 per cent. of eggs with leaking shells are thus contaminated. In the same way the percentage of eggs containing bacteria is less in eggs with clean shells than in those with dirty shells; and as a corollary it was found that the percentage of eggs containing *Bacillus coli* is the same for clean, cracked eggs as for whole-shelled, dirty eggs. The physical condition of an egg indicates to a large extent its state of preservation. The white of a strictly fresh egg is stiff and the yolk stands up firmly; as the egg ages, the white becomes thinner, the yolk flatter and the vitellin membrane weaker. Therefore, when a stale egg is opened this membrane frequently ruptures, and when such an egg is dropped on a plate the contents of the yolk flow into and through the white. Such an egg is called a weak egg, although when it acquires an odor the laity would refer to it as a strong egg. Fertile eggs almost invariably contain weak yolks. It has been found that these eggs appear before the candle to have whole yolks; but on breaking, the yolk mixes freely with the white. It is believed that such eggs are suitable for baking and cooking if their odor is normal and the white not green when the egg is broken. If, however, the seepage of the yolk is so advanced that it extends entirely through the white, the egg should be discarded. When viewed before the candle, a strictly fresh egg will be found to have the yolk located slightly above the meridian and symmetrical with the long axis of the egg. It is indistinct in outline and moves sluggishly as the egg is turned. As an egg ages, the yolk becomes more opaque and may settle against the lowest part of the shell, finally adhering. Such eggs are frequently harborers of bacteria, although the settling of the yolk is not in itself an indication of the fact that the egg contains bacteria; on the other hand, they are sufficiently suspicious not to be included in food products. Most eggs containing bacteria may be recognized by the odor. A weak egg, the authors believe, if it is decomposed to such an extent that it has a muddy white or a whitish streak in the yolk, should be discarded for food purposes. The bulletins are well illustrated with colored plates which will be of great service to those interested in determining the quality of the hen's product.

Presence of Food Accessories in Urine, Bile and Saliva

Muckenfus conducted some experiments to determine the presence of food accessories (vitamins) in urine, bile and saliva, and records his results in the *Journal of the American Chemical Society*, October, 1918. Nine pigeons with acute symptoms of polyneuritis on a diet of polished rice were treated by mouth with fullers' earth activated with from 950 to 1,750 c.c. of fresh filtered ox bile. Eight of these showed improvement while observed, two for five and six days, respectively. Four pigeons with acute symptoms of polyneuritis were given fullers' earth activated with from 4,150 to 6,000 c.c. of fresh filtered human urine. All improved greatly, three of them for five, six and eight days, respectively, one of these having been observed for twelve days before suffering a second acute attack. Three pigeons with acute symptoms of polyneuritis were treated with different samples of fullers' earth that had been mixed with 2,950 and 3,250 c.c. of the bile filtrate from the activated earth. Two improved and one grew worse. One pigeon with acute symptoms was given fullers' earth treated with 15,000 c.c. of the urine filtrate from the activated earth, but continued to grow worse. Three pigeons with acute symptoms of polyneuritis improved after treatment with fullers' earth, activated with 400 to 1,325 c.c. of fresh filtered human saliva. Simple preventive tests with saliva were negative. Four "control" pigeons, which acquired the acute symptoms of polyneuritis on a diet of polished rice along with the others mentioned, were not treated. All grew worse, three dying within a day. The conclusions of Muckenfuss were that the experiments indicate that the antineuritic vitamin is probably present in comparatively small quantity in clean, fresh, filtered bile from the gallbladder of the ox. This food accessory is also present in fresh filtered human urine in traces, apparently.

Chemical Changes in Oysters During Preparation for Market

Edward E. Smith, junior chemist of the Bureau of Chemistry, United States Department of Agriculture, in Bulletin 740 gives the results of an investigation to determine the amounts of ammoniacal nitrogen, amino-acid nitrogen, moisture, total solids, ash and sodium chlorid present in oysters under the various conditions through which they pass in ordinary commercial practice in oyster houses, and to ascertain the effect of washing and soaking in both chemical composition and physical condition of the oysters. The findings, in part, are thus summarized: A marked loss of oyster solids and of ash constituents occurs on washing oysters with fresh water. Oysters covered with water but not agitated are not appreciably affected by osmosis except in relatively long periods of time. Solution proceeds slowly, but amounts to a large percentage of the solids originally present in the course of two or three days. If oysters are agitated in fresh water either mechanically or by a blast of air, a large increase in volume occurs in a short space of time, amounting to as much as 35 per cent. in thirty minutes, and to as much as 50 per cent. in ninety minutes, believed to be due to osmotic action. When washed in water of the same salinity as that in which they were grown, no increase in volume occurs and the loss of nutrients is slight. In the average of all the experiments the ratio of osmotic loss of solids to actual loss is approximately 2:1; for amino-acid nitrogen, all of which is soluble, but which goes into solution slowly, the ratio is approximately 1:1, and for ash-forming substance, which is composed largely of soluble inorganic compounds, the ratio is approximately 1:2.

Medicolegal

Validity of Provisions Concerning "Patent" Medicines

(E. Fougera & Co., Inc. v. City of New York et al. (N. Y.), 120 N. E. R. 642)

The Court of Appeals of New York says that Sections 116 and 117 of the sanitary code adopted by the board of health of the city of New York provided that there should be no sale of "patent," or proprietary, medicines in the city of New York unless the names of the ingredients of every such medicine to which the therapeutic effects claimed were attributed, and the names of all other ingredients, except such as were physiologically inactive, should be registered in the department of health, etc. The argument was made that the ordinance was an arbitrary exercise of the power of government. The court does not think so. Its purpose and effect were well within the limits of the police power. The purpose was the preservation of the public health and safety. The form of protection was publicity. There must be disclosure of the truth to responsible officials, who would prevent or punish the sale of fraudulent or noxious compounds. If that is not a legitimate public aim, the court is at a loss to know where one may be found. It was not important that the ordinance failed to compel disclosure to all the world. Laws are not invalid because they fall short of the maximum of attainable efficiency. Disclosure to all the world might make the protection more complete, but it would also make the hardship more severe. Something less, therefore, had been enacted. Disclosure was to be made to the health officers of the city, and to them only. If fraud or other wrong was discovered, then, and then only, exposure would result. "No man has a constitutional right to keep secret the composition of substances which he sells to the public as articles of food" (*State v. Aslesen*, 50 Minn. 5, 52 N. W. 220). If that is true of food, it is even more plainly true of drugs. A danger exists, and the only question is whether the means of correction are appropriate. The court cannot say that the means have no relation to the end. The public health is safeguarded by disclosure to public officers charged by law with its protection. The court is not called on to approve the wisdom of the ordinance. It stops when it satisfies itself that it has a reasonable relation to the end to be attained.

It was said that the effect of the ordinance was to compel the dealers in "patent" medicines to give evidence against themselves, in violation of the constitution of the state. But, accepting as accurate the stipulation that the admitted object of the defendants in the enactment was to secure information on which to base prosecutions for violations of law, if in their opinion the facts disclosed in accordance therewith should so warrant, the result would not be much changed. The sale of medicines is a business subject to governmental regulation. One who engaged in it was not compelled by this ordinance to expose himself to punishment for any offense already committed. He was simply notified of the conditions on which he might do business in the future. He made his own choice. To such a situation, the privilege against self-accusation has no just application.

It was said again that prosecution might follow if any statement in respect of the curative action of the drug was false, and that to permit this was to inflict punishment for mere error of opinion. The court has no doubt, however, that the word "false," as used in the ordinance, meant wilfully false or fraudulent. If this construction was adopted, the objection vanished.

Nor does the court agree with objections based on a supposed conflict between the ordinance and the federal constitution. It was true that there were some requirements of this ordinance which merely repeated prohibitions of the Food and Drugs Act. If prosecution was attempted for the violation of those requirements as a result of any transaction of interstate or foreign commerce, the question would have to be determined whether the state could thus add to the penalties of the federal law. But such provisions, if they were assumed to be invalid, were separable from the others. The dominant scheme of the ordinance was disclosure of ingredients. That disclosure may be compelled, and the failure to make it, punished, without trespassing on the field which has been occupied by Congress.

But there was one objection to the ordinance which the court thinks pointed to a real defect, though one that amendment might correct, that the ordinance did not except existing stores of merchandise in the hands of druggists or other dealers who did not know the ingredients and could not state them. In that the board of health exceeded the powers delegated to it.

Hospitals and Negligence of Incompetent Servants

(Mikota v. Sisters of Mercy et al. (Iowa), 168 N. W. R. 219)

The Supreme Court of Iowa holds that, in this action to recover for the death of a typhoid patient who jumped from a window of the defendant's hospital, a demurrer was rightly sustained to the plaintiff's petition, which alleged, among other things, that the officers, agents and attendants of the hospital, knowing that the patient was likely to be seized with delusions and delirium, received and placed him in a room on the fourth flour without bars on the windows, and left him there alone, or in charge of incompetent attendants and nurses, and that his death was due to their negligence. The court says that all charities must be administered through human instrumentalities; these are simply the agencies employed in the distribution of the charity, and he who accepts the charity through the instrumentalities employed cannot complain of the manner of distribution, though in it he receives a hurt. On the theory that the defendant was not liable for the negligence of its servants in this case, the court thinks the demurrer to the plaintiff's petition was rightly sustained. It might be contended, however, that the plaintiff had brought the case within the claimed exceptions to the general rule, and had alleged negligence on the part of the corporation itself. But a careful examination of the petition disclosed that in no place did it affirmatively appear that the injury complained of was caused or contributed to by any negligent act of the defendant, by not using reasonable care in the selection of its servants, or that the injury was due to negligence in the selection of servants, as differentiated from the negligence of the servants selected. When the injury is traceable to the negligence of the servant, there is no liability. If the case rested on the negligence of the defendant in the selection of incompetent servants, then it should appear affirmatively that the injury was traceable to such negligence. Even an incompetent servant may be negligent, and if the injury is traceable to such negligence, and not to the incompetency, then there is no liability under the rule. A fair interpretation of the language used leads the mind to the thought that liability was predicated, not on incompetency on the part of the servants employed, but on the negligent manner in which they, whether competent or incompetent, discharged the duty assigned. Even though the court grants the exception, it does not find the case brought within the exception, and the general rule must prevail.

License Revoked for Illegally Prescribing Drugs

(Knoop v. State Board of Health (R. I.), 103 Atl. R. 904)

The Supreme Court of Rhode Island, in this case arising on an appeal, affirms the finding of the state board of health revoking the certificate of appellant Knoop that authorized him to practice medicine and surgery in the state of Rhode Island, because of his having illegally prescribed morphin and cocain for drug addicts. The court says that he continued to treat a number of these addicts, when he knew, according to his own testimony, that they did not desire to be cured, that they were getting drugs from other sources in addition to the amount prescribed by him, and had secured prescriptions for additional amounts from him on their false statements that they had lost a part of their weekly supply. He admitted that a better way of securing a favorable result would have been to require his patients to come to his office at frequent intervals, thereby giving him the power to observe their conditions and control the size of the doses. His reason for not requiring this of his patients was that some of

them were poor and that any such requirement would result in his losing his patients. But however well founded this fear may have been, it could hardly be urged seriously as a good reason for a failure to apply the method of treatment that was required. Moreover, before he went away for a vacation of a couple of weeks, in the fall of 1916, he filled out and signed a number of prescriptions for drugs, leaving a blank for the date in the month to be filled in when the prescripition was issued in his absence. These prescriptions were left with a female relative of his wife who was by arrangement to remain in his office and give the prescriptions to his patients if they called for them, and who then was to fill in the date on the prescription when delivered. This attendant had no medical training, and her only acquaintance with the patients was such as she may have acquired from having seen them in the office of the doctor at different times for a week or two prior to his departure.

That the appellant expected to cure his patients by such a course of procedure was incredible. That he did not expect to cure his patients was made clear by his own testimony, when he was recalled to the witness stand after other witnesses had testified in regard to his method of treatment. He then admitted that he did not expect to cure his patients, that the only practical way of effecting a cure would be by placing them under control in some institution, and that his object was to give his patients a sufficient supply of the drug to enable them to continue their usual occupations.

This particular testimony requires no extended comment. Such treatment for such an avowed purpose is illegal and unprofessional. One of the objects of the statute (Chapter 178 of the General Laws of 1909) is to prevent drug addicts from securing the desired drug and thereby enabling them to continue the drug habit. The legislature recognized the necessity of making some provision for these unfortunate people, and in a proper case the law permitted physicians to prescribe morphin, etc. Such treatment, however, must be in accordance with the recognized practice of medicine, the object of which, whenever it is possible, is to effect a cure.

Neither did the procedure followed by the appellant cure the patient, nor was it adapted to cure him. So long as the patient was able to procure his supply of the drug he would remain a drug addict. The treatment of the appellant was directed principally with the purpose of securing the fees which his patients paid him in order to secure the desired prescription, and the conclusion from the testimony was irresistible that whatever reductions were made in the amount of the drug prescribed were due more to a desire on his part to escape a prosecution for violation of the law than to any expectation on his part of effecting a cure of the patients or of securing for them any permanent benefit. The court is of the opinion that the appellant was guilty of grossly unprofessional conduct and of conduct making him an unfit person to practice medicine in Rhode Island.

Liability for Negligent Burning of New-Born Child

(Dalsgaard v. Meierding (Minn.), 168 N. W. R. 584)

The Supreme Court of Minnesota, in affirming a judgment for damages (amount not stated) in favor of a minor child named as plaintiff, calls the case not only an unfortunate, but a very unusual, one. The court says that the defendant on going to the Dalsgaard home, in response to a call, to attend Mrs. Dalsgaard in childbirth, found her sitting near the heater, and immediately put her to bed. He asked for a hot water bottle, and, being informed that they had none, he directed that some hot flatirons be wrapped, and these were placed at the patient's feet. Shortly thereafter the mother was delivered of the child named in this action as plaintiff. When the baby was born it did not breathe well, and to stimulate and start it breathing the defendant slapped it a few times, and then laid it back with its mother and placed a cover over it. Shortly the child began to cry vigorously. The mother remarked about the fact. The defendant raised the child up, but placed it back. The child continued to cry, and finally the defendant lifted the quilt and saw a flatiron against the baby's head. He removed the iron, and said to the parents: "It is no wonder the baby continues crying so long as the flatiron has become unwrapped and has slid against the baby's head." The right side of the face had been burned, the burn extending several inches above the ear and several inches below the lobe of the ear. The burn was deep, down to the skull. Later the upper rim of the ear sloughed off, and a part of the outer layer of the skull bone came out. The defendant testified that the mother moved about in the bed considerably during her labor, but remained practically quiet thereafter; that he paid no attention to how the irons were placed in the bed; that it was the continuance of the cry that caused him to raise the cover and discover the flatiron. It was claimed on the part of the plaintiff that, the defendant knowing of the presence of the hot flatirons in the bed, it was negligence on his part to have failed to look where he placed the child; that he should have considered that the motion of the mother during her labors was likely to interfere with the flatirons and cause them to become unwrapped and move toward the middle of the bed, where the child was placed, and that his duty as the physician in charge required of him to look so as to avoid the hot iron, and that his failure so to do was negligence for which he was liable. It was the claim of the defendant that the child was accidentally burned, without any fault or want of care on his part. It was also insisted on his behalf that the testimony in the case was insufficient to support the verdict. But this court is unable to say that the findings of the jury were not supported by the testimony. The trial court fully and fairly submitted the case to the jury, and their verdict was final. Physicians generally, as is their duty under circumstances as detailed in this case, look well to the surrounding conditions and to the welfare of their patients.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

Jan. 15, 1919, **25**, No. 1

Factors Involved in Formation of Filum Terminale. F. I. Streeter, Baltimore.—p. 1.

Ultimobranchial Bodies in Postnatal Pigs (Sus Scrofa). J. A. Badertscher, Bloomington, Ind.—p. 13.

*Origin of Phagocytic Mononuclear Cells of Peripheral Blood. F. A. McJunkin, Milwaukee.—p. 27.

Development of Arteries of Human Lower Extremity. H. D. Senior, New York City.—p. 55.

Origin of Phagocytic Mononuclear Cells.—For studying the phagocytic activity of cells, McJunkin uses lampblack, which he claims has an advantage over intra vitam stains, since the reaction is almost immediate. By showing that cells which have ingested carbon (3 per cent. mononuclear ones) completely disappear from the peripheral circulation within twenty-four hours, the failure of those employing intra vitam stains to demonstrate any considerable number of phagocytic cells in the blood is explained. Another advantage of lampblack over intra vitam stains is that thin paraffin sections may be made of the tissue fixed in a way best calculated to bring out the histologic structure. In such sections the limitation of the ingested carbon to the endothelial cells and mononuclear leukocytes assumes the character of a specific reaction for cells of endothelial origin. McJunkin believes that the demonstration of mitoses in endothelial carbon-containing cells lining capillaries which are not lengthening is proof of the origin of phagocytic mononuclear blood cells from the endothelial cells of vessels. That the 5 per cent. of phagocytic mononuclear cells present in human blood consists entirely of endothelial leukocytes seems likely to McJunkin in view of the fact that there is positive proof of this origin and negative evidence showing that they are not of myeloblastic or lymphoblastic origin and that few phagocytic cells of any variety are present in normal extravascular tissue.

American Journal of Public Health, Concord, N. H.

February, 1919, **9**, No. 2

Democracy and Public Health. C. J. Hastings, Canada.—p. 81.
Future of American Public Health Association. L. K. Frankel, New York.—p. 87.
*Urgent Public Health Needs of Nation. R. Blue, Washington, D. C.
Health Problems of Foreign Born. W. H. Brown, Bridgeport, Conn. —p. 103.
Distribution of Vaccines and Serums by State Laboratories. C. A. Shore, Raleigh, N. C.—p. 106.
A Year's Changes in Food Habits. P. H. Bryce, Ottawa.—p. 108.
Isolation of Anthrax Bacillus from Shaving Brushes. J. P. Leake and A. Lederer, Washington, D. C.—p. 114.
Toll of Degenerative Diseases: Plan for Reduction. E. B. Fink, Chicago.—p. 120.

National Public Health Needs.—This article was abstracted in THE JOURNAL, Jan. 4, 1919, p. 66.

American Journal of Roentgenology, New York City

January, 1919, **6**, No. 1

Mastoid Structures as Revealed by Roentgen-Ray Examination. I. Gerber, Providence, R. I.—p. 1.
Hydro-Pneumo-Cranium, with Air in Ventricles. H. E. Potter, Chicago.—p. 12.
Roentgenologic Contribution to Possible Cause of Hereditary Optic Atrophy. H. K. Pancoast, Philadelphia.—p. 17.
Roentgen-Ray Examination of Uterus. J. H. Edmondson, Birmingham, Ala.—p. 23.
*Ventriculography Following Injection of Air into Cerebral Ventricles. W. E. Dandy, Baltimore.—p. 26.
Improved Device for Accurate Localization of Foreign Bodies By Means of Roentgen-Ray. S. C. Barrow, Shreveport, La.—p. 36.
Practical Use of Wheatstone Stereoscope. H. C. Snook, New York. —p. 39.

Ventriculography.—Dandy has injected air into the cerebral ventricles at least twenty times. In some instances the injection has been repeated. The amount of air injected has varied from 40 to 300 c.c., the larger quantities in cases of internal hydrocephalus. Only once has there been any reaction, and in this case the injection (300 c.c.) was made forty-eight hours after the first stage of an operation for cerebellar tumor. All of the injections have been made in children varying from six months to 12 years of age. Invariably the lateral ventricle has been outlined sharply in the roentgenogram. In two instances the third ventricle and the foreamen of Monro were visible. In none, however, has the fourth ventricle of the aqueduct of Sylvius been observed. The practical value from pneumoventriculography is expected principally from the shadows of the lateral ventricles. Even in the few cases here reported ventriculography was a means of diagnosing internal hydrocephalus in the early states. Not only the existence of hydrocephalus but its degree and the amount of brain destruction are at once evident from the ventriculogram. Without a ventriculogram, Dandy says, the diagnosis of internal hydrocephalus in children is frequently guesswork; with the ventriculogram the diagnosis is absolute. Other intracranial conditions may be diagnosed in this manner.

American Journal of Syphilis, St. Louis

January, 1919, **3**, No. 1

Standardization of Wassermann Reaction. J. A. Kolmer, Philadelphia. —p. 1.
Id. C. P. Brown and J. A. Kolmer, Philadelphia.—p. 8.
Frequent but Neglected Evidences of Syphilis from Side of Nose, Accessory Sinuses, and Ear. H. B. Graham, San Francisco.—p. 26.
Neurosyphilis of Paretic Type. I. A. Darling, Warren, Pa.—p. 35.
*Fulminating Syphilid. J. B. Gooken, Hot Springs, Ark.—p. 52.
Two Unexpected Negative Wassermann Reactions: Lichen Planus; Epithelioma. D. W. Montgomery, San Francisco.—p. 54.
*Coagulo Reaction in Syphilis. I. Toyama, Philadelphia.—p. 60.
Plea for Greater Care in Early Recognition of Cerebrospinal Syphilis. C. F. Neu, Indianapolis.—p. 69.
*Value of Laboratory Diagnosis in Neurosyphilis. J. H. Larkin, and L. H. Cornwall, New York.—p. 76.
Criteria as to Cure in Syphilis. R. M. LeComte, Washington, D. C. —p. 106.
*Syphilis and Its Relation to Infant Mortality. P. C. Jeans, St. Louis. —p. 114.
Following-Up of Syphilitic Suspects. J. B. Clark, New York.—p. 126.
*Arsphenamin and Neoarsphenamin Plus Epinephrin. B. B. Beeson, Chicago.—p. 129.
Treatment of Syphilis at Out-Door Department, Toronto General Hospital. W. T. Williams, Toronto.—p. 139.

Fulminating Syphilid.—Gooken reports a case presenting secondary skin lesions, gumma of bone, gumma of lung, and hepatic-visceral involvement, simultaneously and within nine weeks of the appearance of the initial lesion and with the chancre still apparent. Along with this general acute infection the hirsute areas were spared, and both clinically and as far as the examination of the spinal fluid could show, the nervous system had been neglected by the disease. The infection was acquired from the wife, who herself offered no visible signs of the disease. It responded to antispecific treatment quite as readily as the milder manifestations of syphilis.

Coagulo Reaction in Syphilis.—A method is described by Toyama for determining the proper amount of calcium chlorid to be added to oxalate plasma for the preparation of cytozyme containing the smallest amount of thrombin. Of the different extracts of tissues used as antigen in the Wassermann reaction, Toyama says, the best for use as cytozyme in the coagulo reaction is a simple extract of human heart muscle prepared by extracting the tissue with alcohol for a period not exceeding four days.

Value of Laboratory Diagnosis in Neurosyphilis.—In 967 laboratory examinations made by Larkin and Cornwall of spinal fluids from a series of syphilitics with objective signs of nervous involvement, pathologic findings were present in 787, or 81 per cent. In view of the fact that approximately 20 per cent. of those suffering from neurosyphilis do not show pathologic fluids, they are of the impression that it is none too radical to assert that 30 to 40 per cent. of those infected with syphilis have foci in the central nervous system, and that these individuals are "potential candidates for one or other forms of neurosyphilis." From study of the laboratory findings of over 350 spinal fluids embracing some 1,500 examinations the authors are led to believe that there is a rather definite sequence in the appearance of pathologic changes in the spinal fluid. This sequence, though not invariable, is as follows: (1) increase in pressure, (2) increase in globulin, (3) abnormal colloidal gold curve, (4) pleocytosis, (5) positive Wassermann reaction. With certain limitations each of these factors has a value in differential diagnosis.

Syphilis and Its Relation to Infant Mortality.—The statistics reviewed by Jeans show that from 10 to 20 per cent. of adult males and about 10 per cent. of married women are syphilitic, and a minimum of 10 per cent. of marriages involve a syphilitic individual. Seventy-five per cent. of all the offspring in a syphilitic family are infected. In a syphilitic family 30 per cent. of the pregnancies terminate in death at or before the term, a waste three times greater than is found in nonsyphilitic families. Thirty per cent. of all living births in a syphilitic family die in infancy as compared to a normal rate of 15 per cent. in the same class. Probably 25 to 30 per cent. of clinically syphilitic infants die as a result of syphilis. But 17 per cent. of all the pregnancies in syphilitic families result in living nonsyphilitic children who survive the period of infancy. About 5 per cent. of the infant population is syphilitic. According to St. Louis vital statistics, 3.5 per cent. of all infant deaths are ascribed to syphilis.

Arsphenamin and Neo-Arsphenamin Plus Epinephrin.—The use of epinephrin in certain reactions following the intravenous injection of arsphenamin and neo-arsphenamin is discussed by Beeson. In a series of 500 intravenous injections of arsphenamin [using the diarsenol, arsenobenzol (Dermatological Research Laboratories, Philadelphia) and arsenobenzol (Billon brands)] Beeson has observed nitroid crises in approximately 3 per cent. Most of them occurred with diarsenol. He has seen a nitroid crisis appear with the first injection, so that the anaphylactic theory can not always be invoked. These crises have varied from a slight facial flushing with a feeling of fulness beneath the sternum or precordium to extreme redness of face, ears and neck with edema of the lips and tongue accompanied by marked air hunger and conjunctival injection. None of the patients exhibited syncope, but on three occasions marked prostration was complained of. All the injections were given in a dilution of 0.1 gram of arsphenamin to 25 c.c. of plain freshly bidistilled water. About seven or eight minutes was the average time consumed in giving a 0.6 gm. dose. Hence neither the concentration of the solution nor excessive rapidity of inflow were important factors. Beeson always adds 3 or 4

drops of 15 per cent. sodium hydroxid after the solution has cleared, and, when in doubt, he resorts to the use of litmus paper. In spite of these measures reactions will occur, and since those cases seen responded to epinephrin, it is Beeson's belief that suprarenal insufficiency is the determining factor in their production. Hence epinephrin is administered. One milligram may be given intramuscularly ten minutes before the intravenous injection. In those presenting marked nitroid crisis, Beeson has not hesitated to give double that amount.

Annals of Surgery, Philadelphia

January, 1919, **69**, No. 1

*Treatment of Compound Fractures of Skull with Open Dura. E. Sachs, St. Louis.—p. 1.
*Source of Error in Interpretation of Roentgenograms of Skull. S. Moore, St. Louis.—p. 4.
*Surgical Treatment of Cancer of Superior Maxilla. W. S. Schley, New York.—p. 8.
Operative Treatment of Harelip and Cleft Palate. J. H. Nicoll, Glasgow.—p. 12.
*Nonparasitic Cysts of Spleen. A. V. S. Lambert, New York.—p. 15.
*Variability of Pathology and Symptoms of Chronic Intestinal Obstructions. M. Behrend, Philadelphia.—p. 21.
*Resection of Cecum and Ascending Colon. J. S. Horsley, Richmond, Va.—p. 25.
*Torsion of Appendices Epiploice. V. C. Hunt, Rochester, Minn.—p. 31.
*Legg's Disease: Arthritis Deformans Juvenilis: Osteochondritis Deformans Juvenilis: "Perthe's Disease." L. W. Ely, San Francisco.—p. 47.
Use of Rubber Gloves in Surgical Operations. R. T. Morris, New York.—p. 52.

Compound Fractures of Skull.—In cases of this type Sachs advocates the excision of all traumatized tissue, scalp, dura, and brain tissue, replacing the defect in the dura by a transplanted piece of fascia and closing the skin completely without drainage. He has applied this method in two cases with most satisfactory results. The cases are cited.

Roentgenograms of Skull.—It is claimed by Moore that the radiolucent semilunar shadows seen so often in roentgenograms of the head are due to faulty apparatus, especially the cassette, and are of no clinical significance.

Cancer of the Superior Maxilla.—Early and thorough operation is advocated by Schley, thus often leading to a cure because cancer of the upper jaw, especially in the maxillary antrum, remains a local disease until comparatively late. With good preparation and technic the operative mortality is not large. Not a few even advanced cases are cured by a thorough operation.

Nonparasitic Cysts of Spleen.—The case cited by Lambert substantiates the fact that there is no group of symptoms which can be recognized as characteristic of splenic cysts. The cases present a varied picture referable to neighboring organs and directly due to the great enlargement. The spleen was removed successfully in this case, which is presented because it brings up the interesting question of the pathogenesis of cysts lined by connective-tissue cells occurring in various parts of the body, as in bones, thyroid gland, omentum, mesentery and elsewhere. Twelve years previously the patient was severely injured in an automobile accident. Lambert suggests that the cysts may have developed as the result of an infarct or a hematoma.

Chronic Intestinal Obstruction.—Pain was a constant symptom in the four cases cited by Behrend, not always, however, specific in character as to the location of the lesions. Vomiting, a constant symptom in acute intestinal obstruction, was present to a considerable degree in only one case. The other patients vomited rarely or not at all. The pulses of all the patients were not rapid. Another striking feature was the absence of toxemia in these cases, so commonly found in acute cases. All the patients reported recovered, and are still enjoying good health, whereas in acute intestinal obstruction the mortality is 50 to 60 per cent. In two cases the obstruction was caused by adhesions, in another by a slowly forming volvulus. The fourth case, one of purpura hemorrhagica intestinalis, illustrates one of the rarest conditions causing symptoms of chronic intestinal obstruction. A diagnosis of cholecystitis was made on account of the greatest tenderness being in the right hypochondriac region. Gallbladder disease was actually present on account of the black gummy bile which flowed with great difficulty through the cannula. On making a separate incision to remove the appendix an excess of intraperitoneal fluid was noted. This led to the discovery of the hemorrhagic masses extending from the jejunum and including the ileum.

Resection of Cecum and Ascending Colon. — Horsley describes the operative technic which he employed in seven cases of resection of the cecum and ascending colon. In all of them the principles of end-to-end union, ligation of the triangular space on the mesenteric border of the bowel before opening the bowel, and cleaning out the ends of the bowel before suturing were carried out, though in only one case was a valve formed. In one case, the Barber operation was performed, transplanting the ileocecal valve. All of the patients recovered from the operation satisfactorily. An enterostomy was not done in any of these cases.

Torsion of Appendices Epiploicae.—To the cases reported in literature Hunt adds eleven cases which have been under observation in the Mayo Clinic in the past ten years. Seven of these cases are true torsion of the appendix epiploica; one is of doubtful torsion, acting as a band producing intestinal obstruction; two are of incarceration in a left inguinal hernia, and one is of a foreign body in the peritoneal cavity with unproved origin from an appendix epiploica. Four of the cases of torsion presented acute symptoms, for which operation was done, and in the remaining three cases the torsion was probably symptomless, as it was found in the course of abdominal operations for other pathologic conditions. The cases in which there was incarceration in a hernial sac presented symptoms of incarceration of the hernial contents. The foreign body was found in the course of an operation for postoperative hernia, and the appendix epiploica, producing the obstruction of the sigmoid, manifested symptoms of chronic intestinal obstruction.

Legg's Disease.—Legg's disease is an error in development of the whole upper epiphysis of the femur—trochanter, neck and head. In this the acetabulum sometimes shares. It affects chiefly the head and the proximal lateral portion of the neck, and the cartilage between them. The great trochanter may or may not be involved. Five cases are reported by Ely.

Archives of Pediatrics, New York

December, 1918, **35**, No. 12

*Anaphylaxis and Its Relations to Some Diatheses Common to Infancy and Childhood. F. W. Schlutz and W. P. Larson, Minneapolis.—p. 705.
*Mantoux Reaction in Children. O. Reiss, Los Angeles.—p. 714.
Minnesota Plan for Establishment of Infant Welfare Clinics in Smaller Towns. E. J. Huenekens, Minneapolis.—p. 718.

Anaphylaxis.—The experimental work done by Schlutz and Larson consists of the passive sensitization of guinea-pigs against foreign protein by injecting them with the blood serum of patients who seemed to be anaphylactic to these proteins. Their clinical observations were made on four types of cases: (1) extreme atrophy cases; (2) cases of overfeeding with cow's milk; (3) periodic vomiting cases, and (4) cases of the constitutional diathesis styled by Czerny the inflammatory exudative diathesis. The technic adopted was the following: from 3 to 5 c.c. of blood was drawn from the patient. This was allowed to clot and then centrifuged and about one half that quantity of serum obtained. Such serum was injected either intravenously or intraperitoneally into guinea-pigs of 250 to 300 gm. As a rule, the animals showed no signs or ill effects from the serum. Twenty-four hours later the animals were injected with a small quantity of milk, usually intraperitoneally, although sometimes the intravenous method was used. The quantity of milk injected varied from 0.1 to 1.0 c.c. Marked anaphylactic phenomena were obtained in the animals which had received the blood serum from inflammatory exudative diathesis cases. In several of the periodic vomiting cases, similar phenomena were observed. Some of the animals presented the typical picture of Smith's phenomenon. In some of the cases the reaction was followed by bloody stool. Death often occurred within twenty-four hours following the experiment, but more

often from two to five days later. The experiments with marasmus, milk overfeeding, and periodic vomiting have not as yet been completed. The results so far obtained, however, would indicate that the reaction is not as clear cut as in the cases of inflammatory exudative diathesis. From the results of their work thus far it appears to Schlutz and Larson that in at least one type of cases studied (inflammatory exudative diathesis type) definite anaphylaxis to foreign protein exists, and that probably the majority of the phenomena occurring in this condition are truly anaphylactic.

Mantoux Reaction in Children.—For the purpose of checking up the von Pirquet test with some other of the cutaneous tuberculin test, Mantoux intracutaneous injection was done by Reiss on children. A solution of old tuberculin in normal salt solution, 2 min., or 0.005 mg., was used for the Mantoux; normal salt solution for the control. Nineteen of the 120 cases gave positive reactions; one doubtful reaction was classed as negative. The von Pirquet test was never positive in the absence of a positive Mantoux. It was negative in three cases which gave a positive Mantoux. Seventeen of the nineteen positives displayed adenopathy, and of these thirteen, only in two were the posterior cervicals enlarged. Reiss concludes that the intracutaneous tuberculin test when carefully performed seemed somewhat more reliable than the von Pirquet. Tuberculous meningitis cases apparently do not respond to cutaneous tuberculin tests (four cases after repeated tests uniformly gave negative results). The presence of posterior cervical adenopathy in children is highly suggestive of tuberculous infection.

Bulletin of Johns Hopkins Hospital, Baltimore

February, 1919, **30**, No. 336

*Fluoroscopy of Cerebral Ventricles. W. E. Dandy, Baltimore.—p. 29.
Stereoroentgenograms of Injected Lung as Aid to Study of Lung Architecture. W. S. Miller, Baltimore.—p. 34.
*Electromyographic Study of Chorea. S. Cobb, Baltimore.—p. 35.
Pharmacological Appreciation of Biblical Reference to Mass Poisoning. II Kings IV, 38-41. D. I. Macht, Baltimore.—p. 38.

Fluoroscopy of Cerebral Ventricles.—The lateral cerebral ventricles, when filled with air, can be clearly seen under the fluoroscope; twenty-five cases having been studied by Dandy by this method. The results in adults are equally as good as in children. By fluoroscopy hydrocephalus can be diagnosed accurately at all stages of its development. Several unsuspected cases of hydrocephalus have been demonstrated by the fluoroscope. The diagnosis of a false ventricular hernia (ventriculocele) was made with certainty, because the air from the ventricle could be seen to pass directly into the swelling. Fluoroscopy of the ventricle has practically the same range of utility as ventriculography, and almost the same results have been obtained. Following the injection of air into the ventricles, both fluoroscopy and ventriculography should be used.

Electromyographic Study of Chorea.—Five chorea patients were studied by Cobb. He found that choreiform movements give an electromyogram similar to that of a short, normal, voluntary muscular contraction. The inability to maintain voluntary contraction is clearly shown in the electromyograms. Weakness of muscular contraction is shown electromyographically by the lessened electrical discharge.

Canadian Medical Association Journal, Toronto

February, 1919, **9**, No. 2

*Clinical Study of Four Hundred Patients with Bronchial Asthma. I. C. Walker, Boston, Mass.—p. 97.
Military Ophthalmology. S. H. McKee, West Cliff, England.—p. 108.
Arsenic in Syphilis. W. T. Lockhart and J. R. Atkinson, Whitley, England.—p. 129.
Venereal Diseases: Treatment and Cure. O. Wilson, Ottawa.—p. 136.
Artificial Pneumothorax in Treatment of Pulmonary Tuberculosis. E. Grenier, Montreal.—p. 141.
Eyesight of Negroes of Africa. J. N. Roy, Montreal.—p. 144.
Influenza Epidemic in Quebec Garrison. E. A. Robertson, Ottawa. —p. 154.
Pleurisy: Experimental and Clinical. R. C. Paterson, Saranac Lake, N. Y.—p. 160.

Clinical Study of Bronchial Asthma.—Of 400 cases of bronchial asthma studied by Walker, 191, or 48 per cent., gave a positive skin test and were, therefore, sensitive to some protein. Although the prevalence of asthma between the two sexes was about equally divided, the percentage of sensitive cases was a little higher among the males than among the females. The same number of patients had their first attack of asthma at each period of years with the exception that after the age of 45 there was a great decrease and after the age of 60 there were only three cases. The number of persons who developed asthma under the age of 2 and between the ages of 2 and 5 was as great as at any other age. The relationship between the age of onset of asthma and the sensitization of the individual is important. Four fifths of the patients who began to have asthma during infancy were sensitive, two thirds who began during childhood were sensitive; one half of those beginning asthma during young adult life were sensitive, one fourth of those beginning asthma during adult life were sensitive, and none were sensitive that began asthma after the age of 50; as the age of onset of asthma increases, the frequency of sensitization decreases. More patients were sensitive to the protein of *Staphylococcus pyogenes-aureus* than to any other type of bacterial protein, however, sensitization to the protein of *Staphylococcus pyogenes-albus* and the various streptococci was sufficiently frequent to warrant routine tests with these. In the above table the number of positive reactions with bacterial proteins is too conservative since many definitely positive reactions which do not measure 0.5 in diameter are obtained. It is of interest to note the effect of occupation on sensitization after the age of 40. Of the eleven patients who became sensitive to proteins after the age of 40, four were bakers and were sensitive to wheat protein, one was a hostler and was sensitive to horse dandruff protein, and another who was a sifter of green coffee beans was sensitive to green coffee protein. Seventy-eight patients were sensitive to the protein derived from animal hair. Sixty-eight patients were sensitive to food proteins. Ninety-two patients were sensitive to pollens.

Indiana State Med. Association Journal, Indianapolis

Feb. 15, 1919, **12**, No. 2

War Neuroses. H. T. Patrick, Chicago.—p. 33.
Present Status of Radium Therapy. T. C. Kennedy, Indianapolis. —p. 36.
Industrial Clinic. M. A. Austin, Anderson.—p. 40.
Infant Conservation. A. E. Schweitzer, Indianapolis.—p. 44.

Iowa State Medical Society Journal, Des Moines

Feb. 15, 1919, **9**, No. 2

Gynecology and War. E. Ries, Chicago.—p. 35.
Significance of Abdominal Pain. H. C. Jungblut, Tripoli.—p. 38.
Education of Deaf in Iowa. J. H. Spencer, Dubuque.—p. 46.
Repair of Ear Drum. A. J. Joynt, Waterloo.—p. 51.
Graduated Tonsillectomy. F. G. Murphy, Mason City.—p. 53.

Journal of Biological Chemistry, Baltimore

February, 1919, **37**, No. 2

Biologic Values of Wheat and Almond Nitrogen. A. F. Morgan, and A. M. Heinz, Berkeley, Calif.—p. 215.
Method of Expressing Numerically Growth Promoting Value of Proteins. T. B. Osborne, L. B. Mendel and E. L. Ferry, New Haven, Conn.—p. 223.
*New Titration Method for Determination of Uric Acid in Urine. J. L. Morris, Chicago and St. Louis.—p. 231.
*Comparative Distribution of Urea, Creatinine, Uric Acid, and Sugar in Blood and Spinal Fluid. V. C. Myers and M. S. Fine, New York.—p. 239.
Creatinuria and Acidosis. W. Denis and A. S. Minot. Boston. —p. 245.
*Antiscorbutic Property of Vegetables. I. Raw and Dried Tomatoes. M. H. Givens and H. B. McClugage, Rochester.—p. 253.
Physiochemical State of Proteins in Cow's Milk. L. S. Palmer and R. G. Scott, Columbia, Mo.—p. 271.
State of Proteins in Cow's Milk. L. L. Van Slykes and A. W. Bosworth.—p. 285.
*Dietary Properties of Pea (Vicia Sativa). E. V. McCollum, N. Simmonds and H. T. Parsons, Baltimore.—p. 287.
Modifications of Benedict's and Folin's Quantitative Sugar Methods. H. D. Haskins, Portland, Ore.—p. 303.
*Increase in Nitrogen Metabolism of Dog, Following Administration of Desiccated Thyroid. A. Rohde and M. Stockholm, San Francisco. —p. 305.
Acid-Base Balance in Animal Nutrition. I. Effect of Certain Organic and Mineral Acids on Swine. A. R. Lamb and J. M. Evvard, Ames, Iowa.—p. 317.
Id. II. Metabolism Studies on Effect of Certain Organic and Mineral Acids on Swine. A. R. Lamb and J. M. Evvard, Ames, Ia.—p. 328.

Determination of Uric Acid in Urine.—A volumetric method for the determination of small amounts of uric acid in urine is described by Morris. It is based on the instantaneous and complete precipitation of uric acid as the zinc salt and a single direct titration with permanganate in a solution alkaline with sodium bicarbonate. The end-point used is the blue starch iodid color and, because of the mild nature of the oxidation and the excess iodid present, there is no fading to confuse the end-point.

Blood and Spinal Fluid.—Comparative analyses of blood and spinal fluid in fifteen cases are reported by Myers and Fine. The concentration of urea in the spinal fluid averaged 88 per cent. of that of the blood, the concentration of creatinin, 46 per cent.; that of uric acid, 5 per cent., and that of sugar, 57 per cent. These percentage differences represent the order of their solubility in water, and apparently also the order of their diffusibility.

Antiscorbutic Property of Vegetables.—The experiments carried out by Givens and McClugage show that the raw fresh tomato is a very efficient antiscorbutic agent. A small daily addition of this substance to a diet known to produce scurvy in guinea-pigs maintained these animals in apparently perfect health. Raw fresh tomatoes dried in a blast of air at either a low temperature (35 to 40 C.) or a high temperature (55 to 60 C.) retain a significant amount of their antiscorbutic potency. A daily supplement of 1 gm. of raw dried tomatoes protected guinea-pigs from experimental scurvy. Therefore, the tomato may be considered to contain some of the essential dietary substances.

Dietary Properties of Pea.—The data recorded by the authors contribute evidence in support of the general theory which they have formulated; viz., that vegetable foods having similar functions have likewise similar dietary properties. They also present records of experiments which show the supplementary relationships between the proteins of the pea and casein, gelatin, zein and lactalbumin, respectively. It is of great interest that while both casein and zein supplement the deficiencies of the pea proteins, gelatin and lactalbumin do not. From the failure of lactalbumin to supplement the proteins of the pea, or to induce growth when fed in the amounts used in the experiments described in this paper, the authors have come to the tentative conclusion that lactalbumin is either an incomplete protein or a poorly constituted one. They have been unable to obtain any growth in young rats with diets containing 18 per cent. of lactalbumin, as the sole source of protein, when the remainder of the food mixture was so constituted that good growth could be secured when the protein (18 per cent.) of the diet was casein.

Nitrogen Metabolism of Dog.—Experiments were undertaken by Rohde and Stockholm to determine how serviceable are small doses of commercial desiccated thyroid gland administered by mouth, as a means of increasing nitrogen elimination in the dog. The summary of results showing the average nitrogen figures for three days preceding thyroid feeding and for the days of administration, including two subsequent days, would indicate that a daily dose of 0.05 to 0.1 gm. of desiccated thyroid mixture per kilogram of body weight is a dose producing marked effect on nitrogen elimination and a somewhat greater percentage loss in weight than is found in the control animals. Nitrogen elimination in the dog receiving only sugar solutions may be increased approximately 50 per cent. by the administration, during a five to seven day period, of commercial disiccated thyroid gland in doses of 0.10 to 0.15 gm. per kilogram of body weight.

Journal of Cancer Research, Baltimore

January, 1919, **4**, No. 1

*Virulence or Adaptation? W. H. Woglom, New York.—p. 1.
Mammary Carcinoma in Cat. S. Itami, New York.—p. 19.
*Power of Mesodermal Derivatives to Immunize Mice Against Transplantable Tumors. S. Itami, New York.—p. 23.

Virulence or Adaptation?—Woglom suggests that it is possible that the factor which usually decides whether or not a spontaneous tumor can be transplanted successfully is adaptation. But it is equally probable that multiple spontaneous neoplasms occasionally vary in their proliferative energy; in most of them this is so low after transplantation as to be masked by a failure on the part of the tumor cells to adapt themselves, though in the case of a few growths it rises so high as to transcend the adaptive power of these elements.

Mesodermal Derivatives to Immunize Mice.—Experiments were undertaken by Itami to determine whether any other tissues share with the lens, brain, cartilage and bone, their inability to elicit a vigorous immunity. Two mesodermal derivatives—muscle and lymph node—were chosen. In order that the findings might not be vitiated by the presence of blood in these tissues, the greatest care was taken not to injure large vessels during the removal of the material; the small amount of blood contained in the muscle and the lymph node themselves may be regarded as insufficient to produce any immunity. Muscles or lymph nodes were removed from healthy mice, emulsified, and administered subcutaneously in the left axilla of normal young adult mice in doses of 0.5 c.c. (lymph node) and 0.1 c.c. (muscle). Into the opposite axillae of the animals thus injected, and into untreated normal controls of the same size and breed which had been kept aside under identical conditions, grafts (0.003 gm.) of tumor were implanted one to four weeks after the preliminary treatment. It became evident that preliminary treatment with normal tissues containing but few cells, whether they be of ectodermal or mesodermal origin, fails to induce immunity to transplantable carcinomas. Muscle, also, though this is more cellular, is inactive, for some reason at present unknown. Lymph node, on the contrary, has the power to elicit a high resistance against transplantable carcinomas. The mesodermal tissues investigated have no power to immunize against two connective tissue tumors employed, failing like the skin, to protect against sarcoma.

Journal of General Physiology, Baltimore

November, 1918, **1**, No. 2

Studies on Bioluminescence: VII. Reversibility of Photogenic Reaction in Cypridina. E. N. Harvey, Princeton, N. J.—p. 133.
Photic Sensibility of Ciona Intestinalis. S. Hecht, Omaha.—p. 147.
*Indicator Method of Measuring Consumption of Oxygen. W. J. V. Osterhout, Cambridge, Mass.—p. 167.
*Comparative Studies on Respiration. W. J. V. Osterhout, Cambridge, Mass.—p. 171.
*Id. F. G. Gustafson, Cambridge, Mass.—p. 181.
*Id. M. M. Brooks, Cambridge, Mass.—p. 193.
*Id. H. S. Thomas, Cambridge, Mass.—p. 203.
*Id. M. Irwin, Cambridge, Mass.—p. 209.
*Control of Rope in Bread. E. J. Cohn, S. B. Wolbach, L. J. Henderson and P. H. Cathcart, S. C., U. S. A.—p. 221.
Rate of Transmission in Nerve Net of Coelenterates. G. H. Parker, Cambridge, Mass.—p. 231.
Amphoteric Colloids. II. Volumetric Analysis of Ion-Protein Compounds. J. Loeb, New York.—p. 237.

Indicator Method of Measuring Consumption of Oxygen.—For estimating the amount of oxygen consumed in respiration, Osterhout has investigated a number of substances, among them *Limulus* blood. The blood of the horseshoe crab (*Limulus*) absorbs oxygen and turns blue when shaken in air. In the presence of certain organisms which consume oxygen it is quickly decolorized. By measuring the time required for the change of color the rate of consumption of oxygen may be determined.

Effects of Anesthetics on Respiration.—A series of investigations on respiration with improved quantitative methods is being made by Osterhout. They show that when anesthetics are employed in sufficient concentration to produce any result, plants show a rise in the rate of respiration which is followed by a fall. In the animals studied, the rise (found in higher concentrations only) was preceded by a temporary fall which is not entirely due to lowering of muscular activity or tonus. In lower concentrations the effect on animals was merely a decrease of respiration. The results of all the investigations are opposed to the theory of Verworn.

Effects of Ether and Acetone on Respiration.—The action of anesthetics and some other substances on the respiration of a fungus (*Aspergillus niger*) was studied by Gustafson. In concentrations which are high enough to produce any effect, formaldehyd, ether, and acetone cause an increase, followed by a decrease, in the rate of respiration. Three and sixty-five hundredths per cent. ether, which causes an increase with

certain cultures, produces only a decrease in others. The reaction producing an increase in the respiration with 7.3 per cent. ether is a reversible process, while the reaction producing the decrease is not reversible. Five-tenths per cent. caffein produces only a decrease in respiration while a saturated solution causes an increase, which is followed by a decrease.

Effect of Ether on Respiration of Bacteria.—A series of studies on the respiration of bacteria has been undertaken by Brooks. The organism selected for experimentation was *Bacillus subtilis*. Several other organisms were tried, namely, *B. mycoides, Staphylococcus pyogenes-albus, S. citreus, B. typhosus;* but *B. subtilis* was preferred because it was easy to handle. In all the concentrations of ether studied (from 0.037 to 7.3 per cent.) there is an increase in the rate of respiration of *B. subtilis* followed by a decrease. In 7.3 per cent. ether in tap water there is an extraordinary increase in the output of CO_2 (amounting to fifty times the normal). This does not occur when 0.85 per cent. NaCl is added, which indicates antagonism between ether and NaCl. Ether is toxic in low concentrations (0.037 to 1.1 per cent.) and high concentrations (3.65 to 7.3 per cent.) but in intermediate concentrations (1.1 to 3.65 per cent.) stimulates growth.

Effect of Ether on Respiration of Wheat.—Thomas studied the effect of ether on the respiration of wheat. His results are recorded.

Effect of Ether on Carbon Dioxid Output.—The purpose of Irwin's investigation was to make a comparison of the CO_2 output of animals with that of plants under the influence of a typical anesthetic such as ether. The experiments on frog tadpoles, an aquatic insect, *Dineutes assimilis* Aube, frog eggs, and *Fundulus* embryos were used. These experiments show that narcosis is not due to asphyxia. The action of anesthetics is due to some other cause than the effect on respiration. There is a difference between the animals studied and the plants described in this series, since in animals the increase in the CO_2 output is accompanied by irreversible changes leading to death, while this is not necessarily the case in plants. The reversible (narcotic) action of ether on the animals studied was accompanied by a decrease in the carbon dioxid output; in plants this is not ordinarily the case.

Control of Rope in Bread.—Rope is a condition of bacterial decomposition of bread which leads to a peculiar slimy or ropy consistency of portions of the interior of the loaf, produces an odor resembling that of ensilage, and renders the loaf unacceptable. Several closely related organisms have been isolated from ropy bread, some or all of which are undoubtedly the effective agents of the decomposition. The present investigation made by Cohn and his associates has been on a strain of *B. mesentericus* isolated from a ropy loaf. These investigations clearly show that the growth *B. mesentericus* is a function of the hydrogen ion concentration of the medium and that it is favored by the diminished hydrogen ion concentration which is due to the products of its own metabolism. This change in the hydrogen ion concentration may serve as a measure of the growth of the organism and as a means of identification. When possible, the hydrogen ion concentration of bread should be maintained near 10^{-5}N. Such practice would prevent the occurrence of rope. The reaction of dough and bread may be controlled with the help of a suitable indicator, and perhaps more conveniently by the use of a buffer mixture consisting of lactic acid and a lactate or acetic acid and an acetate. At present the simpliest method of controlling the reaction of dough or bread consists in the use of methyl red. When this indicator is colored red rather then orange, the reaction is sufficiently acid to prevent the development of rope.

Kansas Medical Society Journal, Topeka

February, 1919, **19**, No. 2

Relation of Focal Infection and Protein Poisoning to Upper Respiratory Tract. J. E. Sawtelle, Kansas City.—p. 25.
Annual Registration in Medicine. C. F. Nelson, Lawrence.—p. 29.
Quinin Q. S. F. A. Carmichael, Oswatomie.—p. 31.

Maine Medical Association Journal, Portland

February, 1919, **9**, No. 7

Neglected Means of Diagnosis in Circulatory Diseases. S. J. Beach, Augusta, Me.—p. 169.
State Appropriations for Hospital Treatment for Poor. J. F. Babley, Augusta, Me.—p. 175.

Medical Record, New York

Feb. 22, 1919, **95**, No. 8

Gas Poisoning in Warfare. G. H. Cox, M. C., U. S. A.—p. 312.
Deformities of Nose Resulting from Syphilis. W. W. Carter, New York City.—p. 318.
Etiologic Factors Bearing on Therapeutics of Bell's Facial Palsy. J. H. Leiner, New York City.—p. 319.
Therapeutic Value of American Spas and Health Resorts. H. H. Roberts, White Sulphur Springs, W. Va.—p. 321.
Case of Acute Mastoiditis with Perisinus Abscess, Following Influenza Pneumonia. J. E. Sheehan, New York City.—p. 323.
Treatment of Scabies in Private Practice. C. G. Cumston, Geneva, Switzerland.—p. 324.

New York State Journal of Medicine, New York

October, 1918, **18**, No. 10

Is Cesarean Section Justifiable in Eclampsia and Placenta Praevia? G. L. Brodhead, New York City.—p. 389.
Two and One-Half Years with Conservative Treatment of Eclampsia. R. McPherson, New York City.—p. 395.
Fibroid Tumors of Uterus. J. Ill, Newark, N. J.—p. 399.
Some Causes of Still-Birth. J. C. Edgar, New York City.—p. 406.
Establishment and Maintenance of Breast Feeding. J. P. C. Griffith, Philadelphia.—p. 411.
Classification and Serum Treatment of Pneumonia at Camp Upton. R. L. Cecil, Camp Upton, N. Y.—p. 414.
Physician and Public. H. L. Winter, Cornwall, N. Y.—p. 418.

Wisconsin Medical Journal, Milwaukee

February, 1919, **17**, No. 9

Health Supervision of Working Children. G. P. Barth, Milwaukee.—p. 357.
Plan of Federal and State Government Control of Venereal Disease. C. A. Harper, Madison, Wis.—p. 362.
Elimination of Danger in Tonsil Operation and End-Results. F. Pfister, Milwaukee.—p. 369.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

January, 1919, **23**, No. 8

Conditions Found in Amputation Stumps. A. T. H. Nisbet.—p. 237.
Two Cases of Separate Centers of Ossification of Tubercle of Naviculare Pedis. C. E. Dennis.—p. 253.
Case of Myositis Ossificans Traumatica. D. Stone—p. 255.
Lateral Roentgenography in Suspected Injuries of Spine. H. C. Gage.—p. 260.

British Journal of Surgery, London

January, 1919, **6**, No. 23

*Cancer of Tongue: Bradshaw Lecture. D. Power.—p. 336.
Treatment of Cases of Fractured Femur at a Base Hospital. V. Hurley and S. H. Weedon.—p. 351.
*Operative Treatment of Ruptured Internal Lateral Ligament of Knee. T. P. McMurray.—p. 377.
*Procedure for Avoiding Colostomy and Colectomy. A. R. Short.—p. 382.
Displacement of Mandibular Meniscus and Its Treatment. J. H. Pringle.—p. 385.
Secondary Jejunal and Gastrojejunal Ulceration; Cases. G. Wright. p. 390.
Some Phenomena of Surgical Shock. A. R. Short.—p. 402.
Localization and Extraction of Foreign Bodies in Brain: New Apparatus. J. N. Fergusson.—p. 409.
*Study of Peripheral Nerve Injuries from a Surgical Aspect. J. L. Joyce.—p. 418.
Fracture of Femur: External Fixation of Fragments. D. W. Crile.—p. 458.
Fractures of Patellar Border. R. W. A. Salmond.—p. 463.
*Unusual Type of Fracture Dislocation of Upper End of Humerus. T. B. Davies.—p. 466.
Case of Septic Infarct of Spleen, Causing Rupture of Spleen, Hemorrhage and Death. A. H. Todd.—p. 467.
Bilateral Ovarian Dermoid Cysts Simulating Renal Colic. C. H. Fagge.—p. 468.

Cancer of Tongue.—Tobacco, alcohol and syphilis, Power shows, are closely associated in the causation of cancer of the tongue. At the present time syphilis is more prevalent than it has been for many years, and the consumption of tobacco has risen from 7½ million pounds in 1914 to 8½

million pounds in 1915. Much of this tobacco is smoked in the form of cigarets, and women now smoke on a much larger scale than they used to do. It follows, therefore, that if matters are allowed to continue as they are doing, there will be a huge increase in the number of patients suffering from cancer of the tongue. The increase should begin about 1950, and it should affect women as well as men. Power claims that such an increase can be presented by a thorough and systematic treatment of syphilis in its initial stages; for, cancer of the tongue has always increased in frequency some years after syphilis has been treated inadequately. Persons who are being treated for syphilis, therefore, should be told never to smoke, not to drink to excess, and to make regular visits to a dentist in order that their teeth may be kept in the best possible state, and that any dentures they may have to wear should be maintained well fitting and free from rough edges. Such advice should be given while the patient is actually under treatment for syphilis. It is useless to defer it until the tongue has become sore, because it is then too late in a large number of instances.

Operative Treatment of Ruptured Internal Lateral Ligament of Knee.—The operation done by McMurray in ten cases results in changing the insertion of the sartorius muscle tendon from the inner aspect of the upper end of the tibia to the inner aspect of the lower end of the femur. A slightly curved incision, convex posteriorly, is made from 3 or 4 inches above the adductor tubercle to 1 inch below the tibial insertion of the internal lateral ligament. The anterior flap is reflected forward, and this discloses all the structures on the inner aspect of the joint. Lying slightly posterior to the joint, and held back by the fascia which covers it, is the sartorius tendon, lying close to the semitendinosus and gracilis. The fascia which secures the sartorius in its normal posterior position should be divided along the whole extent of the operative incision, so that the tendon can now be freely advanced. The femoral insertion of the internal lateral ligament is now clearly defined, a vertical slit about 1½ inches long is made through it down to the bone, and through this slit a small vertical wedge of bone is removed from the femur, large enough to admit of the sartorius being placed into it. This removal of bone is accomplished without interfering to any extent with the attachment of the ligament to the femur, so that no further weakening of the ligament is caused by it.

The sartorius tendon is pulled forward and laid in the groove in the femur in such a manner that the portion of the tendon between the femur and the tibia is quite tight, and it is then sutured firmly into the groove by stitches passing through the periosteum and the ligamentous insertion. When this has been accomplished successfully, the outer aspect of the internal lateral ligament is first scarified and then the ligament is tightened up in the usual manner by suturing adjacent portions of the scarified surfaces together. The fascia is now sutured along the line of incision, and skin sutures complete the closure of the operation wound. The knee should then be retained in the semiflexed position by means of splints or plaster for the next three months, when it will be found that full extension of the leg will be secured in the course of two or three weeks.

The success of the operation depends on keeping the knee in the flexed position during the whole course of the procedure, and the subsequent retention of this position during the minimum period of three months, in order to prevent stretching at the new insertion which will undoubtedly occur if strain is allowed to fall on it before this interval has elapsed.

Procedure for Avoiding Colostomy and Colectomy.—Short performs an end-to-side ileosigmoidostomy with division of the ileum, the distal end being brought out into the wound. By passing a catheter through it into the cecum, the gas can be drawn off; and flushing with warm water, containing an ounce or two of magnesium sulphate mixture, can be given through the catheter, which effectually clears the bowel.

Peripheral Nerve Injuries from a Surgical Aspect.—This paper is devoted to the study of the surgical treatment of war-injured nerves. Joyce dwells mainly on the operative treatment. He cites many cases, chosen from about 200 cases treated by nerve transplants and double lateral implantations, suture, neurolyses: (*a*) complete physiologic divisions; (*b*) incomplete physiologic divisions; (*c*) painful lesions; (*d*) cases associated with aneurysms and brachial plexus injuries, and alternative operations. Joyce found that in the majority of cases, delayed end-to-end union of a divided nerve is successful, and this method of repair is that of choice. Exploration of a physiologic completely divided nerve should be done as soon as the condition of the wound permits. Neurolysis combined with a capsulectomy of spindle-shaped neuromas has been followed by recovery in most, and improvement in all, cases in which this has been done; exsection of a spindle-shaped neuroma is not justified unless failure has resulted from a neurolysis capsulectomy. Nerve transplantations, and double lateral implantations of the ulnar into the median in the forearm, have been followed with some measure of success, including some recovery of voluntary power in the affected muscles; but recovery is slow and uncertain. Nerve growth takes place from both ends of a divided nerve, and from both ends of a nerve transplant, but axis cylinders grow down only from the central end. An autogenous nerve transplant, of smaller size than the nerve into which it is planted, is capable of hypertrophy. Axis cylinders, judged by Tinel's sign, grow at the average rate of 2 mm. per diem. Perineural scar tissue constricting young axis cylinders is the most important factor in hindering recovery.

Unusual Type of Fracture Dislocation of Upper End of Humerus.—Davies' case was one of subcoracoid dislocation of the head of the humerus, together with a spiral fracture passing downward and inward from the outer part of the head, ending on the inner aspect of the shaft of the bone just above its center.

British Medical Journal, London

Feb. 1, 1919, **1**, No. 3031

*Bone Grafts. W. I. de C. Wheeler.—p. 119.
*Total Enucleation of Prostate. P. J. Freyer.—p. 121.
*Ureters and Their Orifices in Cases of Gunshot Wounds of Spine. A. Fullerton.—p. 124.
Management of Venereal Diseases in Egypt During War. J. W. Barrett.—p. 125.
*Presence of "Filter Passing" Virus in Certain Diseases. J. R. Bradford, E. F. Bashford and J. A. Wilson.—p. 127.

Some Points About Bone Grafts.—Wheeler's opinions as to the inherent value of the bone graft are, in general, in accord with the views held by others. He believes that the periosteum should be left on the graft, because, although not essential, it is the medium through which new blood vessels enter the graft and the surrounding structures. Furthermore, in removing the periosteum superficial layers of osteoblasts may be sacrificed. A periosteum covered graft is less likely to become absorbed rapidly. As to what type of graft is to be used in certain cases, Wheeler says that in the case of the humerus and femur, long stout inlay grafts give the best results. Sliding grafts should only be employed in simple and fresh cases. But for slightly slower osteogenetic powers, and a real tendency to fracture, the intramedullary peg is effective. This method of bone grafting is satisfactory in the case of the radius and ulna.

Total Enucleation of Prostate.—In the 1,550 cases of total enucleation of the prostate performed by Freyer up to date, the mortality has been 5⅓ per cent., diminishing from 10 per cent. in the first 100 to 3 per cent. in the last 200 cases. Freyer advises early operation, before the vital organs, and particularly the kidneys, become secondarily affected.

Ureters and Their Orifices in Gunshot Wounds of Spine.—Cases with injury at the tenth, eleventh, and twelfth thoracic spinal segments were investigated by Fullerton to ascertain whether any relaxation or paralysis of the ureters or their sphincters is present in complete transverse lesions of the cord in the cervical and dorsal regions, in view of the frequency of "ascending" infection of the kidney. From this study Fullerton concludes that peristalsis of the ureters continues, as evidenced by the rhythmical discharge of urine rendered more visible by indigocarmin. Normal movements of the lips of the ureteral orifice take place, as evidenced

by the visible systole and diastole present in all the cases. The tone of the ureterovesical sphincter is maintained and the valve is competent.

In order to avoid the disasters likely to result from the use of the catheter, other methods of treatment (pending the establishment of spontaneous micturition) have been suggested by various surgeons. One is to allow the bladder to distend until overflow takes place through the urethra (paradoxical incontinence). The urine is received into a receptacle placed between the patient's thighs. A second is to endeavor by pressure in the suprapubic region, combined, perhaps, with counterpressure by two fingers in the rectum, to overcome the resistance at the vesical outlet, and so to empty the bladder, partially at least. The important point to consider here is whether such distension or pressure is likely to force urine through the ureterovesical orifices toward the pelvis of the kidney. With this end in view, observations were made by Fullerton which showed that it appears to be safe, from the point of view of forcing the ureterovesical orifices, to attempt to empty the bladder by manual massage or pressure. Regurgitation into the pelvis of the kidney is not favored by any abnormal relaxation of the ureterovesical orifice special to spinal injuries. In fact, increased intravesical pressure, whether produced by urine or by fluid introduced through the urethra, actually tends to increase the efficiency of the valve formed by the oblique course of the lower end of the ureter through the coats of the bladder, provided that the ureteral orifice is not paralyzed or dilated.

Filter Passing Virus in Certain Diseases.—The virus isolated by the authors in trench fever consists of minute coccus-like bodies, grouped in pairs, with the opposing surfaces flattened, and varying in size from 0.3 to 0.5 microns. It is gram-positive and stains readily if the film preparations are washed in ether before the stain is applied. It passes through Berkefeld N and V filters, and also through Massen porcelain filters, and can be cultivated from such filtrates. It resists heating to a temperature of 56 C. for thirty minutes, and it is an anaerobe. This organism has been recovered by culture from the blood in eleven out of fifteen cases of trench fever examined during the pyretic stage, and in three out of eight cases examined when apyretic. It was not found in over forty control cases where blood culture with the same technic was carried out. A similar organism was recovered from four separate supplies of infected louse excreta. It was not found in thirty-one specimens of excreta from batches of clean lice. The culture obtained either from the blood of man, or from louse excreta, when inoculated by scarification into man, produces a mild illness, and the organism can be recovered from the blood by culture during such illness, and also from clean lice fed on the patient during the illness.

The virus isolated in cases of influenza consists of very minute rounded coccus-like bodies, varying from 0.15 to 0.5 microns. It is gram-positive, and passes through Berkefeld N and V filters and Massen porcelain filters. It is an anaerobe, and resists heating to 56 C. for thirty minutes. It has been isolated by culture from the blood in six out of nine cases examined, from the sputum in six out of six examined, from pleural fluid in four out of four examined, and from the cerebrospinal fluid in the only case so examined. It has also been isolated from the lymph glands post mortem in the only two cases examined. This organism can not only be grown from the blood, and from exudates, but it can also be seen in stained films prepared from exudates—for example, sputum, pleural fluid, cerebrospinal fluid. The culture (second generation), when inoculated into animals subdurally or intravenously, produces illness in guinea-pigs and monkeys. Passage experiments done from such animals when slightly ill, by injecting their blood, bile, etc., into healthy animals, causes in these more severe and even fatal illness, and postmortem the same lesions are found. The organism has been recovered by culture from the tissues of such experimental animals.

The virus isolated in cases of nephritis characterized by the presence of pyrexia and hematuria at the onset consists of a round coccus-like body varying from 0.3 to 0.6 microns in size, and in culture, often occurring in the form of short chains of four individuals. The same organism may be seen in urinary sediments either singly or in pairs. It is gram-positive, and passes through Berkefeld N and V filters, and also through the Massen porcelain filter. It is an anaerobe, and resists heating to 56 C. for thirty minutes. It has been isolated from the blood in six out of nine cases examined, and from the urine in seven cases. The culture (second generation) when inoculated into animals, produces nephritis in monkeys and guinea-pigs. In severe cases pulmonary lesions are also present. An organism allied apparently to that of polyneuritis has been isolated from brain tissue in cases of encephalitis lethargica.

China National Medical Journal, Shanghai

December, 1918, **4**, No. 4

Influenza Epidemic in Peking. E. T. Hsieh.—p. 129.
North Manchurian Plague Prevention Service. W. Lien-teh.—p. 132.
Report on Hookworm Infection, Pinghsiang Colliery, Hunan. F. C. Yen.—p. 140.
Chinese Preserved Eggs—Pidan. K. Blunt and C. Wang.—p. 145.
Dislocation of Spine. K. Woo.—p. 155.
Sugar in Treatment of Wounds. G. G. Davitt.—p. 157.
Wassermann Reaction. C. E. Lim.—p. 161.
Chapters in Chinese Surgery. J. Dudgeon.—p. 166.

Indian Medical Gazette, Calcutta

January, 1919, **54**, No. 1

Civil Surgeon "On Tour" in Upper Burma. J. Entrican.—p. 1.
Analysis of 1,200 Consecutive Abdominal Operations Performed for Gynecologic Disease on Burmese Females. C. C. S. Barry.—p. 5.
Influenza Pandemic. R. N. O. Moynan and L. D. C. Menses.—p. 14.
Treatment of Panophthalmitis. A. J. E. Lister.—p. 17.
Divided Stretcher. C. G. Taylor.—p. 19.
Circumcision. W. D. Sutherland.—p. 20.

Lancet, London

Feb. 1, 1919, **1**, No. 4979

Plea for Medical Unanimity and Public Spirit. H. Morris.—p. 166.
*Significance of Inverted "T" in First Lead of Cardiogram. I. Harris.—p. 168.
Presence of Filter-Passing Virus in Certain Diseases. J. R. Bradford.—p. 169.
Suspension Treatment of Fractures of Thigh. W. H. Johnston.—p. 170.
*Case of Ectopic Gestation. B. T. Rose and E. H. Shaw.—p. 175.
*Eradication of Latent Sepsis Preparatory to Bone Transplantation in Nonunion of Gunshot Fractures of Limbs. H. Platt.—p. 175.
Some Advances in Polygraphic Technic. H. L. Flint.—p. 176.
Repair of Male Urethra. E. D. Telford and F. G. Norbury.—p. 177.

Inverted "T" in First Lead of Cardiogram.—An electrocardiogram taken from those patients who complained of dyspnea on exertion, fainting fits, edema, without showing any obvious causes accounting for the symptoms, showed the T in Lead I inverted in all these cases. All those patients who showed an inversion of T in the first lead have invariably shown one or more symptoms usually associated with defective heart action. The conclusion reached by Harris is that an inverted T in the first lead is a reliable sign of a damaged heart muscle.

Ectopic Gestation.—The case cited by Rose and Shaw is an example of a very early rupture—six weeks' pregnancy only—of the rarest of all types of ectopic pregnancy—viz., that in the interstitial part of the tube.

Two Stage Bone Grafting Operation.—Such a procedure is urged by Platt. The first operation is at once an attempt at wound sterilization, a provocative measure, and a reconstruction of the bed for the future graft. The bone transplantation is performed in from six to eight weeks after the uncomplicated healing of the first stage operation.

Practitioner, London

February, 1919, **102**, No. 2 (Part 2)

Influenza as Affecting the Respiratory System. H. Mackenzie.—p. 53.
*Influenza and Vaccines. W. D. Emery.—p. 64.
*Treatment of Influenzal Bronchopneumonia: Vaccine Therapy. W. H. Wynn.—p. 77.
Nervous System in Influenza. W. Harris.—p. 89.

Influenza and Vaccines.—Emery reviews the bacteriology of influenza and the use of vaccines. He believes that the position of affairs at the present day is most unsatisfactory. Really but little more is known now than at the time of

previous epidemics, when the disease was attributed to an "influence" from the heavenly bodies and named accordingly.

Influenzal Bronchopneumonia: Vaccine Therapy.—Wynn's experience leads him to believe that prompt treatment with vaccines (pneumococci, streptococci, influenza bacilli), within a few hours of the onset will definitely abort an attack of influenza. In the cases in which bronchopneumonia is present from the first, vaccine seems often to have the same good effect when it is injected early. The striking feature with the use of vaccines, as noted by Wynn, has been the almost constant fall in temperature following the injection. He says that the earlier the injection is made, the more likely is the fall to be final. In cases injected after the second day, more than one injection is usually required before the temperature finally settles. Occasionally, the first dose fails to cause a drop in the temperature, and a second larger dose is required to bring this about. If the fall of temperature occurred alone, or was followed by collapse or other bad signs, it would not be desirable, but the fall is associated with improvement in the aspect and in the pulse and respiration rate, which, in Wynn's opinion, indicate that it is due to a definite immunizing influence. The important points for successful treatment are to give an adequate dose as early as possible after the onset of symptoms. Inadequate dosage and delay will cause disappointment.

Archives des Maladies de l'App. Digestif, Paris

January, 1919, **10**, No. 1

*Diagnosis of Syphilitic Tumors in Digestive Tract. L. Bard.—p. 1.
*Technic for Examination. M. Labbé.—p. 12.
Dyspeptic Conditions from Aerial Shock. Loeper and Wagner.—p. 29.
*The Bile-Pancreatic Juice Reflux with Duodenal Ulcer. C. B. Udaondo —p. 38.
Gastric Hypersecretion with Normal Functioning. Maingot and J. C. Roux.—p. 43.

Diagnosis of Syphilitic Tumors in Stomach and Intestine.—Bard does not agree with Fournier and others who deny that it is possible to differentiate a syphilitic tumor from other tumors in stomach and bowel. It has been his experience that in certain cases of smooth, regularly shaped tumors, extremely movable, not tender, growing very slowly and inducing local stenosis but without notable impairment of the general health, a history of syphilis can be generally elicited, and the tumor retrogresses under specific treatment unless it is of tuberculous origin. In the latter event, the delay for trial of specific treatment does no harm.

Technic for Examination in Disease of Digestive Tract.—Labbé outlines the system he follows in examining a patient who complains of stomach or bowel disturbance.

The Reflux of Bile with Duodenal Ulcer.—Udaondo has been studying the connection between the localization of the ulceration and the reflux into the stomach of the duodenal juices, the bile and pancreatic juice. The green discoloration or the tryptic ferment in the contents of the fasting stomach was found in 84.5 per cent of his 13 cases of ulcer in the first part of the duodenum; only in 22 per cent. with ulcer in the second part. In 32 cases of ulcer in the stomach remote from the pylorus, there was no duodenal reflux in 87.5 per cent., as also in 88.8 per cent. of 27 cases of ulcer on or near the pylorus. With induced reflux (Volhard's procedure) trypsin tests were positive in 81.8 and 87.5 per cent. of the cases of ulcer in the first and second parts of the duodenum, but only in 8.3 per cent. of the juxtapyloric ulcer cases. Lesions remote from the pylorus gave 33.3 per cent. positive responses.

Bulletin de l'Académie de Médecine, Paris

Jan 7, 1919, **81**, No. 1

Colloidal Metals Plus Serotherapy in Treatment of Bronchopneumonia and Purulent Pleurisy. J. Parisot and J. Lecaplain.—p. 34.
*Gangrene from Arteritis After Influenza. Molina and Others.—p. 37.
Guaiacol Cacodylate in Influenza. F. Barbary and E. Hamaide.—p. 39.

Jan. 14, 1919, **81**, No. 2

*Polyvalent Vaccine Therapy of Influenza. F. Bezançon and R. Legroux. —p. 44.
*Daily Hygiene of the Mouth. P. Robin.—p. 49.
Microbiology of Influenza. Meunier.—p. 51.
*Healed Fracture of Jaw in Prehistoric Skull. M. Baudouin.—p. 52.

Postinfluenzal Gangrene.—Molina relates that a robust young woman, at the fifth month of pregnancy, was convalescing from a moderately severe influenza of the pulmonary form, when gangrene developed in the right leg, with delirium. The pain on palpation did not extend above the popliteal space and the leg was amputated at the middle third. The woman left the hospital, cured, in a week, the pregnancy apparently undisturbed. The femoral artery was found thrombosed at the point of amputation, showing that the pain on palpation and the thrombosis do not always coincide.

Polyvalent Vaccine Therapy.—Bezançon and Legroux report experiences which amply demonstrate the harmlessness of the polyvalent vaccine they have been using. It contains in 1 c.c. 4 millions pneumococci to 2 millions each of streptococci, Pfeiffer's bacillus and *Micrococcus aureus*. It seems best to inject the vaccine daily, about 0.25 c.c. at a time at first, increasing the dose to 1 c.c. In this way they injected up to a total of 13 c.c. In one group of sixty repatriated prisoners with influenza given this treatment, the mortality was 8 per cent, while it was 17.8 per cent. among the group of twenty-five not given this treatment.

Hygiene of the Mouth.—Robin emphasizes that in disease and in times of epidemics the virulence of the microbes in the mouth is presumably enhanced, and hence the toilet of the mouth becomes exceptionally important. The benefit from the cleansing of the teeth and gums and the daily hygiene of the mouth three times a day is mechanical. Dentifrices, etc., destroy the living cells more readily than they destroy microbes, predisposing the tissues to infections of all kinds, and they had better be abandoned. During epidemics, frequent gargling and rinsing out the mouth with very hot Ringer's solution is advisable for both the sick and well.

Prehistoric Skulls.—See Paris Letter, page 587.

Bulletins de la Société Médicale des Hôpitaux, Paris

Nov. 15, 1918, **42**, No. 32

*Hyperesthesia of Thyroid with Exophthalmic Goiter. C. Lian.—p. 1041.
Serum Diagnosis of Hemorrhagic Spirochetosis. Denéchau.—p. 1047.
*Suture of Severed Spinal Cord. H. Claude and J. Lhermitte.—p. 1051.
*Tardy Chancres. L. Bory.—p. 1057.
Primary Lesion in Leprosy. L. Bory.—p. 1060.
*Brachial Paralysis from Cervical Rheumatism. A. Léri.—p. 1061.
Periscapular Amyotrophy. A. Léri and Perpère.—p. 1065.
Hexamethylenamin and Methylene Blue in Influenza. Loeper and Grosdidier.—p. 1067.
Camphorated Oil by the Vein in Treatment of Influenza. Loeper and Fumouze.—p. 1070.
Hexamethylenamin by the Vein in Serofibrinous Pleurisy. Loeper and Grosdidier.—p. 1073.
Factitious Jaundice Kept Up for Two Years. C. Aubertin.—p. 1075.
Influenza in Troops. A. Rouquier.—p. 1078.

Pain in Thyroid from Contact as Sign of Incipient Exophthalmic Goiter.—Summarized page 527, Feb. 15, 1919.

Suture of Spinal Cord.—Claude says that the young man survived for eight months after the meningo myelorrhaphy. Necropsy confirmed that the cord had been completely severed at the tenth dorsal segment. The case reaffirms the folly of attempting myelorrhaphy, either early or late. Far from beneficial, it always entails complications of different kinds.

Tardy Chancres.—Bory reports a case in which prompt treatment arrested the primary chancre. Three years later it began again where it had left off, and then ran its typical course with roseola. In another case the secondary phenomena were retarded for eight months.

Brachial Paralysis from Cervical Rheumatism.—Léri's patients in this group presented amyotrophic paralysis of the left superior brachial plexus, and radiography revealed lesions of chronic rheumatism in the form of osteophytic protuberances and hooks in the left fourth or fifth cervical vertebrae, just at the emerging point of the fifth cervical root. In others the sixth or seventh vertebra showed the parrot beak projection causing the trouble. In some cases a supernumerary cervical rib was involved. He has encountered eight cases of this kind within a short time. There was nothing to call attention to the neck, the discovery of the bone lesions was casual but they were unquestionably the cause of the periscapular amyotrophy.

Journal de Radiologie et d'Electrologie, Paris

December, 1918, **3**, No. 3

Precision in Radiography. A. Lumière.—p. 97.
Severe Roentgen Burn of Shoulder. Chaillous and Laquerrière. —p. 103.
Technic for Radium Treatment. A. Laborde.—p. 106.
Report from Military Radiologic Service.—p. 113.
Polydactylia. R. Ledoux-Lebard and Others.—pp. 129-130.
Paralysis of Vastus Internus with Ulnar Paralysis. P. Charpy. —p. 131.
New Apparatus.—p. 132 to 136.

Paris Médical, Paris

Dec. 28, 1918, **8**, No. 52

Tardy Narcolepsy After Concussion of Brain. J. Lhermitte.—p. 509.
*Surgical Treatment of Loose Joints. Genevet.—p. 513.
Primary Suture of War Wounds During Offensive Movement. P. Bertein.—p. 518.
*Sugar Test in Diagnosis of Meningitis. J. Pignot.—p. 521.
*Influenza and Spirocheturia. Maclaud and Others.—p. 522.

Loose Joints.—Genevet presents evidence to prove that total resection of the elbow joint with proper treatment afterward will guarantee good functioning later. Even if a flail joint should result, this can be corrected by intervention at any time, as he describes, with illustrations of an old case. He advises total resection for all gunshot wounds of the elbow except when the bullet has merely traversed the joint, or the joint still contains projectiles; also for all grave suppurative lesions of the elbow in which ankylosis in a good position represents the best outcome to be otherwise anticipated. The statistics on record of resection of the elbow are very unfavorable, but investigation of the circumstances shows that the aftertreatment had been left to inexperienced hands in the unfavorable cases. In his nineteen cases of resection of the elbow, followed to date, most of them tardy interventions, all have healed with a neoarthrosis with good functioning in flexion and extension. In nearly every instance the excursions are complete, and they never have been less than 90 degrees, that is, a right angle. He relies on suspension with wire, fastening the stumps loosely together with wire. The joint is exercised at the earliest possible moment, as soon as the inflammation or pain has subsided. The ends of the wire loosely uniting the humerus and the ulna are twisted together for a certain number of turns, and then a rubber drain is slipped over the twist to isolate the wire from the tissues. Between the twenty-fifth and the thirtieth day he untwists the ends of the wire, cuts one end and pulls out the rest of the wire by the other end. No anesthetic is required. With the wire passed through the stumps they can be pulled up into a good position and held there, although there may be quite a gap between the stumps.

Sugar Content of Cerebrospinal Fluid.—Since Pignot first called attention to the diagnostic importance of the sugar content of the cerebrospinal fluid, experience has confirmed its value more and more. The sugar content shows no change from normal with meningeal symptoms, an aseptic and limpid fluid. The sugar disappears from the fluid with actual meningitis, and its progressive reappearance in acute nontuberculous meningitis is a sign of recovery. In case of a relapse, the sugar disappears anew, but returns as the critical phase passes over. The sugar content keeps normal also when serotoxic phenomena simulate a relapse. A reliable quantitative test for the sugar content is thus extremely important, and he says that this is realized by supplementing the Fehling test with a color test. The Fehling precipitate is treated with a 10 per cent. solution of ammonia molybdate. An intense blue tint develops proportional to the amount of the sugar present, even in the minutest quantities.

Spirocheturia in Influenza.—Maclaud reports the finding of spirochetes in the urine of thirty-eight among sixty-one soldiers with influenza.

Presse Médicale, Paris

Jan. 16, 1919, **27**, No. 3

*The Blood Groups. G. Giraud.—p. 21.
*Influenzal Purulent Pleurisy. L. Legendre.—p. 22.
*Lumbar Painful Point in Appendicitis. G. Brun.—p. 23.

Classification of Blood for Transfusion.—Giraud summarizes the research of Moss in this line, and reaffirms the importance of selecting blood for transfusion which harmonizes with the recipient's blood, that is, in which agglutination does not occur. All that is necessary to avoid is the agglutination of the donor's red corpuscles by the patient's serum.

Influenzal Purulent Pleurisy.—Legendre says that 34 per cent. died of twenty-three men with purulent pleurisy in the course of influenza. Analysis of the fatal cases teaches the necessity for postponing the operation until the lungs have returned more or less to normal. The effusion can be tapped and cleared out by intrapleural injections of specific serum until the lungs are in a condition to stand an operation on the thorax. Before this, intervention invites disaster.

Lumbar Painful Point with Appendicitis.—Brun has had a number of cases of acute appendicitis in which the pains and contracture were more pronounced in the inferior lumbar region than in front. The appendicitis was retrocecal in these cases. This form is more common in children than in adults. The painful point in the lumbar region should be sought with care in conditions suggesting appendicitis, especially when there is not much to be noted in front. He has found this painful point in 30 per cent. of his cases. It is located above the middle portion of the right iliac crest. The maximum intensity is in the outer angle of the triangle of Petit. There may be contraction of the muscles of the posterior wall, and comparison with the left, sound side is instructive. These findings not only reveal appendicitis which might otherwise escape recognition, owing to the negative findings in the iliac fossa, but they also guide the surgeon to the most convenient mode of access to the appendix.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Jan. 11, 1919, **49**, No. 2

*War Neuropathology. E. Landau.—p. 33.
Duodenal Diverticulum in Man of 48. H. Siegrist.—p. 47.

War Neurology.—Landau reviews his experience during two and a half years' service in war hospitals in France to which neurologic cases were referred. He thus examined 8,000 neurologic cases, and among the points which impressed him was the instructive reflex to be elicited by tapping the side of the head of the radius. He calls the reflex thus induced the superior radiopronator. By testing for the Babinski sign fifteen or twenty men in succession, the variations in it with different pathologic conditions have convinced him that it is not a reflex in the ordinary sense of the term, but a phenomenon which no theory yet advanced will explain. With cases of neurosis, hysteria and psychoneuroses, he was very successful with his method of treatment which he calls psychic isolation. The first essential is that the physician must appear to the patient invariably exceptionally kind and sympathetic. But the examination is done in the presence of his friends and mates, and the findings are explained in scientific form but so all can understand. Textbooks may be passed around the circle—all to demonstrate that there are reasons for doubting the organic character of the affection. When possible, a patient with an actual organic affection of the kind is demonstrated at the same time, and the points of difference are emphasized. By this means, in two or three sittings, the man with merely a psychoneurosis becomes "psychically isolated" as his friends and mates feel that he is not a subject for sympathy and commiseration, and they thus become unconscious allies of the physician. Their criticism and ridicule soon bring the patient to a normal point of view, and he is cured. Paralysis, deafness, mutism, blindness, contractures and causalgia thus vanished in a few hours or days, like dew before the sun. Epidemics of hysteria befell the hospitals at times, and these were conquered in much the same way. A series of popular lectures was organized, the first on venereal diseases, the second on alcohol, and the third on psychoneuroses, emphasizing the differential points between actual mental upset after contusions and the phenomena of psychoneuroses. Men with the former are generally morose and silent, never noisy and turbulent. Actual cases were demonstrated, and then

the lecturer, without dwelling too long on this, turned to another subject. In a few days noisy hysteria had disappeared from all the hospitals in Landau's jurisdiction.

Annali d'Igiene, Rome

Nov. 30, 1918, **28**, No. 11

*Scission of Neutral Salts in the Body. A. Scala.—p. 605.
*The Prevailing Febrile Pandemic. A. Lanfranchi.—p. 620.
*Epidemic Pruriginous Eruption. G. Sampietro.—p. 624.

Cleavage of Neutral Salts in Contact with Colloids.—Scala's research at the Istituto d'Igiene of the University of Rome has demonstrated that sodium chlorid and sodium sulphate and phosphate in contact with animal and vegetable colloids form compounds from which hydrochloric or sulphuric acid dissolve out in relatively large amounts. The first two thus entail an acid condition; the compounds with the phosphate entail an alkaline condition. In normal conditions, a balance is maintained, but otherwise acidity or alkalinity may come to predominate. The resulting disturbances form two great groups, one including pellagra, the other diabetes. He explains that improper diet or instability of the nervous system is the cause of the primary metabolic disturbance responsible for the upset.

Influenza.—Lanfranchi reviews the epidemics of influenza in recent decades in connection with epizootics in horses and other domestic animals.

Epidemic of Itching Eruption.—Sampietro compares reports from Spain with experiences in Italy showing the existence of a contagious itching eruption. Fal and Pineda encountered it at a few points in Andalusia and called it *prurigine epidemica microbica*, but in Italy it goes by the name of *rogna americana*. It affects the more sensitive areas of the covered skin, and is sometimes accompanied by fever, but the evolution is benign. A diplococcus is found in the depths of the papules. There is no evidence to incriminate an acaris.

Gazzetta degli Ospedali e delle Cliniche, Milan

Nov. 3, 7, 10, 1918, **39**, No. 88, 89, 90

Epidemic Influenza. A. Grieco.—p. 759.

Nov. 14, 17, 21, 1918, **39**, No. 91, 92, 93

War Wounds of the Skull. E. Greggio.—p. 765.

Rivista Critica di Clinica Medica, Florence

Nov. 16, 1918, **19**, No. 46

Smallpox in Italian District. V. Fedi.—p. 541.

Archivos Españoles de Pediatria, Madrid

November, 1918, **2**, No. 13

*Influenza in Children. C. S. de los Terreros.—p. 641. To be continued.
*Ether by the Rectum for Children. A. Hinojar.—p. 657.

Influenza in Children.—De los Terreros was impressed with the small number of children affected with influenza in comparison with adults, and the lesser gravity of the disease in children. In all, the constant symptoms were supra-orbital neuralgia, the prostration during the acute phase and the depression during convalescence. In one child of 3 the very high fever subsided in three days and the child seemed recovering when it developed somnolency for two days. It could be shaken awake but dropped back into the stupor immediately—suggesting the so-called lethargic encephalitis. Epistaxis was common and seemed to be a favorable sign, never having been noted in the graver cases. He had one case in a 2 year old who had a convulsion and then extremely high feyer but no other symptoms till death in scarcely more than twenty-four hours. The incubation period seemed to be about forty-eight hours. Among the sequels of influenza, the rapid development of pulmonary tuberculosis was the most serious. He has encountered quite a number of such cases among older children. A few children developed nephritis after the influenza; he ascribes this to injury from elimination of the disease toxins through the kidneys.

Ether-Oil Anesthesia by the Rectum.—Hinojar has now a record of 160 operations on the ear, nose or throat of children from 1 to 12 years old, under ether anesthesia by the rectum. This experience has convinced him that this procedure is absolutely harmless for children, while for adults serious by-effects are comparatively common. Children are certainly less susceptible than adults to the possible actions of ether, either from absorption or by reflex action from the intestines. If the ether is eliminated by the lungs too rapidly, respiration can be hindered and thus the action of the anesthetic prolonged, or a few whiffs of chloroform can be given in addition. There is no phase of excitement with ether given by the rectum, but there may be a tendency to vomit and hence the stomach should be empty when the child comes to the table. Vomiting with the ether alone does not occur till tardily, usually the next day. He gave 50 gm. each of ether and oil to children under 3; above this age he increased the proportion of ether, 65 to 55 of oil, for children from 3 to 5; 80 to 65 of oil from 5 to 8, and, from 8 to 12, 90 gm. of ether to 75 gm. of oil, but he did not hesitate to increase these doses at need as experience confirmed the tolerance of the children. With adults, on the other hand, he had three fatalities; these patients all had cancer of the larynx or tongue and one had chronic colitis besides.

Cronica Medico-Quirurgica, Havana

October, 1918, **44**, No. 10

Scientific Pan-Americanism. F. M. Fernández.—p. 535.
Transformation in Medical Practice from Progress in Science. J. Santos Fernández.—p. 543.
Trigger Finger. A. B. Judson.—p. 548.
Some Medical Aspects of the War. F. M. Fernández.—p. 551.

November, 1918, **44**, No. 11

Scientific Americanism. J. E. Lopez Silvero.—p. 583.
Intradural Tumor of Optic Nerve. M. Cohen.—p. 584.
Impressions of Recent Trip to the United States. J. S. Fernández.—p. 587.
Rural Hygiene. F. F. Oliva.—p. 599.
Medical Journals of Cuba. F. M. Fernández.—p. 604.

Gaceta Medica de Caracas

Dec. 15, 1918, **25**, No. 23

*Inherited Malaria. E. Tejera T.—p. 244.
Oxytocic Action of Quinin. J. de D. V. Ruiz.—p. 245.
Influenza. J. R. Carcaño.—p. 246.

Inherited Malaria.—Tejera examined under the microscope the blood of newly born infants in his district, where malaria is endemic. The blood from a finger, drawn a few minutes after birth, revealed the *Plasmodium vivax* in one child and the *falciparum* in another. In these two cases the women had been under treatment for florid malaria for a short time before delivery. No quinin was given in one case as the family feared it might bring on a miscarriage. In the other an abortion at the fourth month was under way. The falciparum was cultivated from the blood and also from the spleen and liver of the fetus. In the first case the blood in the child was examined at the twelfth, twenty-fourth, seventy-second and ninety-fifth hours, with positive findings each time. At the forty-eighth and ninety-fifth hours the child's temperature had run up to 39 C. paralleling a febrile paroxysm in the mother. Two further parallel febrile attacks were seen in the child and the mother, but then quinin treatment was begun and pushed and the clinical picture was soon modified. Tejera cites some recent writers to the effect that only three authentic cases of inherited malaria are on record.

Medicina Ibera, Madrid

Nov. 23, 1918, **5**, No. 55

*Some Contraindications for Heliotherapy. A. Sierra.—p. 183.
*Treatment of Influenza. A. S. Alvarez.—p. 183.
Atypical Chancres. Sicilia.—p. 185.

Nov. 30, 1918, **5**, No. 56

*Influenza. R. Velasco.—p. 209.
*Metastatic Gonorrheal Conjunctivitis. B. Carreras.—p. 210.
Influenzal Bronchopneumonia. A. Piga.—p. 214. Com'd in No. 55, p. 186.

Contraindications for Heliotherapy.—Sierra states that while in the majority of cases of surgical tuberculosis marked benefit is realized from partial or total sunbaths, in certain cases the lesions seem to be whipped up to greater activity. This latter group includes the febrile cases. Extreme caution is indispensable when there is fever of even tenths of a Centigrade degree. If the temperature is half a degree or

more above normal, sunbaths will aggravate the condition, and hence heliotherapy is contraindicated in these circumstances. Bone or joint tuberculosis is benefited more by sunbaths than pulmonary tuberculosis. Another contraindication is a tendency to hemophilia and hemoptysis. The sunbaths are liable to bring on hemorrhages difficult to control. Heart disease and valvular lesions, no matter how perfect the compensation, likewise contraindicate heliotherapy. Precordial anguish, palpitations and syncope are liable to be brought on by somewhat prolonged sunbaths. Sierra urges to exclude from heliotherapy nervous patients; congestions and general excitement are liable to follow heliotherapy. He warns further that albuminuria likewise contraindicates it, as the edema may spread and fatal uremia may develop; hence the necessity for analysis of the urine before applying heliotherapy. In conclusion he warns against sunbath treatment for the much debilitated, especially children, for those exhausted by long suppuration, and cachexia. He gives only these general principles without citing any specific instances.

Iodin Treatment of Influenza.—Alvarez gives iodin internally and sodium sulphate in enemas, and extols the efficacy of this combination in treatment of influenza. He gives 5 drops of tincture of iodin every three hours, from the beginning of the disease. He says it has a bactericidal action, neutralizing, tonic, antitoxic and immunizing action, regulating the temperature, cell functioning and circulation, while reducing congestions. The best vehicle for it seems to be milk alone or coffee. Scientific theory and clinical experience confirm the benefit of this treatment. In prevention, he orders as the minimum dose for an adult 15 drops every eight hours. He cites other writers who laud the use of iodin internally, and he does not hesitate to call it a fundamental treatment for all infections. (The tincture of iodin of the Spanish Pharmacopeia is of 10 per cent. strength.)

Influenza.—Velasco in this second article emphasizes the marked tendency to hemorrhage in some of his cases of influenza. One robust young priest had a hemorrhage from the lungs of about 350 gm. of pure blood the fourth day and died eighteen hours later. He was impressed further with the absence of high temperatures even in the gravest cases.

Metastatic Gonorrheal Conjunctivitis.—Carreras remarks that metastatic conjunctivitis may be a manifestation of gonorrhea which has apparently subsided completely. In one case of gonorrhea, one knee developed arthritis and one eye showed a metastatic affection of the conjunctiva and cornea with iridocyclitis — an actual segmentitis, but complete recovery followed. From one to four weeks is the usual duration of metastatic gonorrheal conjunctivitis. In Carreras' case recovery was complete within thirteen days, but the joint lesions long persisted. In addition to the usual simple measures for treatment of the eyes, vaccine therapy was applied. The cornea in these metastatic cases is rarely affected; he knows of only one case with rapid and complete destruction of the cornea. But iridociliary lesions frequently complicate metastatic conjunctivitis.

Progresos de la Clinica, Madrid

December, 1918, **6**, No. 72

Electrocardiography. L. Calandre.—p. 329.
Eclampsia and Albuminuria. V. Aza.—p. 342.
Operative Indications in Cholelithiasis. J. P. R. Crespo.—p. 345.
Revision of Conception of Influenza. A. S. de Val.—p. 355.
Principles of Refraction in the Eye. S. Lence.—p. 364.
Workmen's Compensation in Spain. A. Oller.—p. 372.

Revista Ibero-Americana, Madrid

December, 1918, **40**, No. 172

Palography. M. Gil Casares.—p. 401.
Degeneration and Atavism. E. Vilches y Gomez.—p. 415.
Ulcer of the Cornea. G. Leoz y Ortin.—p. 431.

Revista de Medicina y Cirugia Practicas, Madrid

Nov. 28 to Dec. 28, 1918, **121**, Nos. 1532 to 1536

Medical Aphorisms. S. V. De Castro.—p. 225.
Value of Sodium Hypochlorite in Surgery. J. E. Dale.—p. 232.
Influenza. D. A. Ayala.—p. 257. J. G. Arista.—p. 321. J. M. Baltar. p. 353.
*Volvulus of Sigmoid Flexure. J. Blanc Fortacin.—p. 289.

Volvulus of Left Colonic Angle.—Blanc Fortacin's patient was a woman of 40, previously healthy, and the ileus from volvulus of the sigmoid flexure had lasted for four days. Exudation in the peritoneal cavity testified to some infection yet the intestines showed no signs of paralysis outside of the twisted loop, and the general condition was surprisingly good. There was evidently edema in the twisted loop preventing passage of flatus even after the volvulus was reduced. Consequently there was danger of damage with strong peristalsis waves, and to avert this he punctured the cecum to permit escape of gases. By the thirty-sixth hour the normal course of the intestinal contents had been resumed, and recovery was complete at once.

Revista Medica Cubana, Havana

December, 1918, **29**, No. 12

Treatment of Bronchopneumonic Form of Influenza. Aballi.—p. 625.

Revista Medica del Rosario

December, 1918, **8**, No. 6

*Amputation of the Foot. A. Baraldi.—p. 441.
Diaphragmatic Hernia. A. Zeno.—p. 452.
*Tetany and Physiopathic Symptoms. T. Fracassi.—p. 458.
*Cancer of the Uterus. J. B. Abalos.—p. 466.
Surgical Abdominal Lesions. R. Araya.—p. 473.
Bone Grafts. J. B. Abalos.—p. 499.

Amputation of Foot.—Baraldi gives an illustrated description of what he calls the operation of P. Duval. It is the last link in the chain of osteoplastic operations that can be done between the calcaneum and the tibia; it is intermediate between the Pirogoff and the Guyon amputations. No matter how much the foot is crushed, this technic is almost invariably applicable and it leaves the patient with a useful leg. The ventral position is peculiarly advantageous for all plastic operations on foot and leg. The elliptical incision passes from the interline of the tibio-astragalus articulation down to the farthest rear of the sole, 15 or 20 mm. in front of the vertex of the arc formed by the profile of the heel. The posterior aspect of the calcaneum is sawed off perpendicularly, forming a plate about 1 cm. thick, and then the foot is amputated just above the malleoli. The flap cut from the calcaneum is sutured to the stump of the tibia with catgut or with a wire passed around the flap and through the tibia. The wire had to be removed later in one case, and he intends in future to use kangaroo or reindeer tendon as taking longer to be absorbed than catgut. In the case described the foot had been run over by a car wheel but the stump can be used now, a year later, exactly like a normal sole. The man is now fitted with an artificial foot.

Physiopathic Nervous Disturbances.—Fracassi reports a case which he thinks is the first of the kind to be described in Argentina. It resembles in every respect the nervous disturbances after war wounds which Babinski calls reflex nervous disturbances, or physiopathic syndromes. There was no wound, but the man of 34 had been repeatedly severely chilled in working in the fields in the rain, and he developed tetany, with painful spasmodic contracture of the hands and feet exactly like the accoucheur's hand contracture noted after war wounds. It has been ascribed to immobilization, but there had been no immobilization in this case. The microsphygmia, loose joints and other symptoms of Babinski's physiopathic syndrome were all present; the limbs were weak and there was both hypotony and atrophy in certain muscles of arms and legs. In another case the traumatic clubfoot was the result of chronic arsenical poisoning; in others of leprosy, or of extreme fatigue—some of these factors have evidently cooperated in the development of physiopathic disturbances after war wounds. The constant coexistence of hysteria with the physiopathic disturbances sustains the close connection between them, and explains them as the result of blocking of the sympathetic nervous system. This blocking might be overcome by some intense, painful electric stimulation capable of generating powerful counter inhibition, as Tinel has advocated.

Cancer of Uterus.—Abalos has been visiting in Europe and here relates some of his impressions as he journeyed from

one surgical service to another. He was impressed with the earlier stage of uterine cancer which European surgeons see in comparison to what occurs in Argentina. Surgeons outside of the great surgical centers are too apt to wait for the diagnosis of cancer to be certain—by the time the malignant nature of the affection is beyond question, the growth is too often inoperable. He cites Pollosson's dictum that operative treatment is required in every case of uterine cancer unless there are formal contraindications. The latter now has a record of over 400 Wertheim operations with 35, 61 and 69 per cent. permanently cured, for three or four years or longer. He emphasizes that the fundamental condition for extensive abdominal operations is the dissecting out of the ureters through their entire course in the pelvis. In his latest series, the actual cures, according to Winter, were 52 per cent.

Semana Medica, Buenos Aires

Oct. 31, 1918, **25**, No. 44

*Thrombosis Simulating Tuberculous Meningitis. M. J. Rizzi.—p. 517.
*Syphilitic Lesions in Uterine Adnexa. C. A. Castaño.—p. 520.
Supernumerary Mammary Glands; Three Cases. C. Lanza.—p. 530.
*Psychology of the Aviator. J. A. Lopez.—p. 532.
Pubiotomy versus Symphysiotomy. T. A. Chamorro.—p. 534. Cont'n.
Plasmogenesis; Technical Points. A. L. Herrera.—p. 538.
Proposed Campaign of Eugenization. G. P. Goñalons.—p. 539.

Nov. 7, 1918, **25**, No. 45

Insufficiency of Left Ventricle. J. Destéfano.—p. 543.
*Tapeworm in Cat. S. E. Parodi.—p. 548.
Garlic in Treatment of Tuberculosis. D. T. R. Davison.—p. 550.
*Tearing Loose of Mesentery with Hernia. A. Gallo.—p. 553.
*Milk-Coagulating Ferment in Ovarian Extract. L. Goldemberg.—p. 554.
*Tuberculosis in Spaniards in Argentina. E. R. Coni.—p. 555.
*Echinococcus Cyst in Liver. C. A. Bambarén.—p. 556.

Nov. 14, 1918, **25**, No. 46

*Chemical Research on Gastric Juice. F. Landolph.—p. 569.
*Prophylaxis of Syphilis. J. A. Raíces.—p. 579.
Chemical Reactions of Phenyldimethylpyrazolon. J. A. Sanchez.—p. 587.
The Mortality from Influenza. E. R. Coni.—p. 591.
Prophylaxis of Juvenile Delinquency. V. Melcior y Farré.—p. 592.

Thrombosis of Lateral Sinus.—Rizzi reports a case which deceptively simulated tuberculous meningitis, in a girl of 11 with a tuberculous mother. When he saw the child first, the thirteenth day, the main symptoms were somnolency although the mind was clear, irregular fever, the back of the neck rigid, the pulse fast, not modified by change of attitude, pain in the mastoid region and over the squamous bone, but no convulsions, no strabismus or anisocoria. His diagnosis of thrombosis of the lateral sinus was confirmed by the operation, not permitted till the fifteenth day, when the child was already in coma. No benefit was realized apparently from the extensive operation, and the child was apparently moribund, when, the fourth day after the operation, he succeeded in discovering a large decomposing parietal thrombus. Removal of this transformed the clinical picture at once, with rapid recovery. Such cases teach the folly of attempting to cure without amply opening up the sinus and carrying the investigation far beyond the apparent confines of the lesion.

Syphilis of the Uterine Adnexa.—Castaño does not hesitate to assert that syphilis is always involved in fibromatous lesions of the uterine adnexa. He has never encountered a fibroma of the kind except in syphilitics, the disease inherited or acquired. The tendency to sclerosis, especially when there are preexisting or concomitant gonorrheal or streptococcus lesions, results in those tubo-ovarian abscesses or bilateral salpingitis which fuse the adnexa into a solid, knobby mass sometimes involving the uterus or bowel or both. This conglomerate can be recognized by palpation. Although it seems to be an extensive inflammatory process, only amenable to a radical operation, yet under combined mercurial and iodid treatment the whole process is liable to retrogress completely, and the patients live the rest of their lives in perfect condition so far as these organs are concerned, free from pain and hemorrhages. Attempts to operate in this class of cases have resulted in the highest mortality of all gynecologic interventions.

In his service he gives systematic treatment for syphilis as an indispensable preliminary to operation in all cases of fibromas. This smoothes the way for the operation in every case and often renders it unnecessary. Very few cases of syphilitic adnexitis have been published, as every one takes it for granted that the whole process is referable to the gonococcus or streptococcus, thus failing to recognize the share of syphilis in the lesion. Examination of the tubes after removal will often show that the lesions are of a gummatous type. In every case the syphilis tends to induce sclerosis and adhesions. This should be borne in mind at all operations in this region as the sclerosis and the adhesions may retrogress under specific treatment and there is no need to break up the adhesions to other organs. Vessels and lymphatics may have developed in them to such an extent that it is dangerous to cut or tear them. In the differential diagnosis it is important to remember that with a fibroma in the uterus its cavity always enlarges. If a catheter shows that the uterus cavity is only 6 or 7 cm. long, the assumption of a fibroma can usually be discarded.

The Psychophysiology of Aviation.—Lopez reviews some of the points that have impressed him in his observation at the military aviation school. He says that every muscle in the body is worked in the process of flying, that is, during equilibration in the air. The muscular movements are gentle, but all the muscles are involved sooner or later in the flight.

Tapeworm in Cat.—Parodi found in a cat nine specimens of the *Dipylidium trinchesei*. It is the first time that this parasite has been recognized at Buenos Aires. Its intermediate host is not known.

Disinsertion of Mesentery with Strangulated Hernia.—Gallo reviews cases of this kind on record and reports a case personally observed. His patient was a married woman of 54. The mesentery of the strangulated loop in the femoral hernia had been torn loose, and it was sutured after 50 cm. of the loop had been resected.

Ferment in Ovarian Extract That Coagulates Milk.—Goldemberg describes experiments which demonstrated in ovarian extract a proferment that, when activated with calcium chlorid, coagulates milk.

Tuberculosis in Spaniards in Argentina.—Coni has brought down to date his statistics in regard to the racial prevalence of tuberculosis. The figures show a death rate from tuberculosis per ten thousand inhabitants of 28.6 for the Uruguayans in Buenos Aires, while the figures are 17 for the Spaniards, 16 for the Argentines, 10.7 for the Italians and 8 for the Russians.

Perforation of the Stomach After Echinococcus Disease of Liver.—In Bambaren's case the young woman had been operated on twice for echinococcus cysts in the liver. In dressing the wound after the second operation, stomach contents were found in the cyst which had been sutured to the lips of the laparotomy incision. With enteroclysis and Fowler's position, heart tonics and ice to the abdomen, the condition improved and the opening into the stomach seemed to heal spontaneously. There must have been localized peritonitic adhesions enough to wall in the process and prevent serious complications from the perforation. If the operation had been delayed a few days, the cyst might have perforated into the stomach, and its contents passed out this way.

Chemical Research on the Gastric Juice.—Landolph has been analyzing the gastric juice of dogs, and describes the technic with which the chlorin in the three fractions of the distillation can be determined.

Prophylaxis of Syphilis.—Raices advocates, besides the usual general prophylactic measures, absolute suppression of attempts to regulate prostitution; arrangements for medical treatment of venereal diseases in connection with all state establishments with a considerable number of employees, and intensification of all means for diagnosis and treatment as outpatients or in hospitals. His tabulated statistics show that in the last five years the number of new cases of syphilis ranged from twenty to 100 each month, only two months showing a lower figure than this—seventeen and twelve. He emphasizes that if girls are not enlightened by their mothers, the day comes when Nature enlightens them, and the natural instincts speak louder than the conventions. Nature pushes and does not warn of any dangers.

Siglo Medico, Madrid

Nov. 16, 1918, **65**, No. 3388

Internal Texture of Malaria Plasmodium. F. Muñoz Urra.—p. 937.

Nov. 23, 1918, **65**, No. 3389

*Anesthesia in Hysteria. A. S. Herrero.—p. 959.
*Psychiatry and the War. W. H. R. Rivers.—p. 960.

Nov. 30, 1918, **65**, No. 3390

Fundamental Considerations in Roentgen Therapy. B. N. Canovas.—p. 973.

Anesthesia in Hysteria.—Herrero comments on the well established fact that persons in extreme excitement, profound emotion, may not feel pain from some serious wound. The consciousness does not register the sensation of pain. There is evidently some congestion in the endocosmos which shuts off the innervation of the organic periphery, even in the healthy. This absence of perception (mental vision) is a feature of hypnosis. This action and reaction between the psychic endocosmos, the innervation and the peripheral organism from the Ariadne's thread which leads us out of the maze of hysteria.

Psychiatry and the War.—Rivers remarks that the influence of the war on psychiatry has been enormous. The most important effect has been the closer relations between psychiatry and neurology. Another change has been the greater respect paid to psychanalysis by many who before were hostile to it. The Freud school of psychanalysis have learned that sex is not the sole factor in the production of psychoneuroses but that other instincts, self-preservation, etc., may also intervene in the production of psychoneuroses.

Vida Nueva, Havana

December, 1918, **10**, No. 12

History of Mosquito Transmission of Yellow Fever. C. E. Finlay.—p. 321.
Notes on Influenza. J. C. Pineda.—p. 324.
Roentgen Localization of Projectiles. P. L. Fariñas.—p. 326.
*A Criminologic Diagnosis. I. Castellanos.—p. 330.

Criminologic Diagnosis.—Castellanos discusses a recent crime in which a child of seven was gashed repeatedly by its father who had become absolutely convinced that the blood of the daughter would cure him of rheumatism. This belief had been fostered by the child's stepmother.

Mededeel. v. d. Burg. Geneesk. Dienst, Java

1918, No. 7. Edition in English and Dutch

*Contagious Jaundice with Spirochetes and Symptoms Suggesting Blackwater Fever. W. Schüffner.—p. 1.
*Blackwater Fever. C. D. de Langen.—p. 26.
*Gallstones in the East Indies. C. D. de Langen.—p. 44.

Spirochetes in Blackwater Fever.—Schüffner reports the discovery of spirochetes numerous in the blood of a robust young native of Java who died within two days with symptoms of acute blackwater fever. His photographic reproductions of the microscopic findings show the spirochete without coils. Inoculation of guinea-pigs with the patient's blood was constantly negative, although it was swarming with the parasites. It is possible that young guinea-pigs might prove more susceptible, and he urges that they should be given a trial in such cases as also all other laboratory animals and the larger domestic animals. Perhaps by so doing an intermediate host may be discovered. In two other cases the disproportion between the serious general condition, suggesting severe poisoning, and the objective findings was striking; inoculation of guinea-pigs was also negative and no spirochetes were found in the blood but possibly this was due to inefficient technic. In the case mentioned first, various modifications of the technic had to be tentatively tried before the spirochetes finally showed up. In cases of blackwater fever in future, the blood should be examined at the earliest possible moment and the eyeballs should be examined for evidences of jaundice. The high leukocytosis, pains in the calf and the serious general condition will aid in differentiation.

Blackwater Fever.—De Langen reports his study of nine cases of blackwater fever, including two in Europeans. The resisting power of the red corpuscles seemed to be normal, but the residual nitrogen was exceptionally high even in the cases without anuria. He is convinced that the share of quinin in the origin of blackwater fever has been much overrated. He was never able to find anything resembling the cell enclosures described by Leishman. In treatment, heart tonics and calcium salts were the main reliance and eight of the patients recovered. Quinin was not given except to one patient with tertian malaria. Cholesterol given in the form of egg yolk did not display any benefit. In the last case, intramuscular injection of 15 c.c. of blood serum from a normal person was followed by a drop in the temperature. In two days the defervescence was complete while the hemoglobin disappeared from the urine, and except for the severe anemia the patient seemed perfectly normal. Two months later the patient developed the same set of symptoms anew. Immediately he was injected with serum—this time fresh dysentery serum was used as it happened to be on hand—and the next day the urine was normal once more. These two experiences justify further attempts in this line.

Gallstones in the East Indies.—De Langen states that only from 3 to 11.2 per cent. cholesterol was found in gallstones found in fifteen cadavers. In only one of the cases had the cholelithiasis been suspected during life. There have been only thirty cases of gallstones diagnosed in the last ten years in the government infirmaries among the 422,943 admittances. These figures confirm his previous statements, mentioned recently in these columns, as to the rarity of gallstones in the East Indies, and the exceptionally low cholesterol content of the blood in the natives.

Nederlandsch Tijdschrift v. Geneesk., Amsterdam

Dec. 21, 1918, **2**, No. 25

Research on the Blind Spot. T. Wassenaar.—p. 1952.
*Suprarenal Extracts. W. S. v. Leeuwen and M. v. der Made.—p. 1961.
Intravenous Injection of Silver Salt in Influenzal Pneumonia. M. A. van Andel.—p. 1963.
Syphilitic Hepatitis Mistaken for Gallstones or Nephritis. J. P. J. Hattink.—p. 1965.
Acute, Transient Swelling of Salivary Gland. D. H. Koetser.—p. 1967.
*Agglutination Reaction in Diagnosis of Typhus. U. G. Bijlsma.—p. 1967.

Suprarenal Extracts of Different Origins.—Van Leeuwen's tests showed absolute concordance in the action of several makes of suprarenal preparations, only one, and this a domestic product, differing in its action.

The Agglutinating Test with Proteus Cultures in Typhus.—Bijlsma says that the extensive literature on the Weil-Felix test agglutination in diagnosis of typhus has demonstrated its practical usefulness, although a scientific theoretical explanation is still lacking. The proteus strain in question, the X strain, as they call it, was cultivated from the urine of two patients with typhus. By repeated cultivation of the proteus from typhus urine they finally found one strain, X 19, which is agglutinated by typhus patients' serum even extremely diluted. This strain is the one now commonly used for the tests. Others have cultivated similar strains from both blood and urine; the technic for the test is the same as for any agglutination method. Preparations made with this strain for indefinite conservation, like Ficker's "diagnosticum," are said to have given good results by certain German investigators. The proteus test seems to be specific for typhus. In other diseases the response is negative or it occurs only with high concentration.

Hospitalstidende, Copenhagen

Nov. 13, 1918, **61**, No. 46

Early Microscopic Findings in Lupus of Nasal Mucosa. K. A. Heiberg and O. Strandberg.—p. 1585.
*Intussusception of Stomach. J. Fabricius-Møller.—p. 1592.

Intussusception of the Stomach.—Møller gives an illustrated description of the findings at necropsy of a woman of 66 with acute stenosis of the pylorus from intussusception of the stomach into the pyloric region and incarceration in the duodenum of a large pedunculated papilloma in the stomach. The neoplasm had probably existed for many years but had caused no symptoms until not long before death. He has been able to find only two analogous cases in the literature, one of them Wade's case. All the patients were elderly

women with a pedunculated tumor which had not caused symptoms until it slipped into the duodenum. Signs of stenosis of the pylorus are the first to attract attention, either chronic or acute as in Møller's case. Blood in the stools and jaundice may be observed, but the prognosis depends on the promptness of operative relief. In conclusion he refers to Ederlen's case in which the invagination occurred in the much dilated esophagus.

Hygiea, Stockholm

Nov. 30, 1918, **80**, No. 22

*Primary Myxoma in Heart. H. Bergstrand.—p. 1265.

Primary Tumor in Heart.—Bergstrand reports that an unmarried woman of 25 had presented symptoms for a few months suggesting acute endocarditis. It had been preceded by a few months of occasional paroxysmal tachycardia. Necropsy revealed a myxoma 4 cm. in diameter. The pathology is discussed and compared with literature on primary tumors in the endocardium.

Norsk Magazin for Lægevidenskaben, Christiania

December, 1918, **79**, No. 12

*Traumatic Affections of Brain. F. Harbitz.—p. 1289.
*Temperature Changes with General Paralysis. O. Lie.—p. 1325.
*Purpura. C. Johannessen.—p. 1336. Conc'n.
*Examination of the Heart. M. Solberg.—p. 1371.
*Sarcoma in Iris of Woman. O. Berner.—p. 1373.
Treatment of Infected Wounds. R. Ingebrigtsen.—p. 1381.
*The Abdominal Reflexes. G. H. Monrad-Krohn. Supplement, pp. 1 to 180.

Trauma of the Brain.—Harbitz discusses from the medico-legal standpoint traumatic apoplexy, traumatic neuroses and traumatic pachymeningitis, reporting some typical instances of each with his conclusions as to treatment and the causal connection with the trauma. In some of the cases there was an interval of several months between the accident and the apoplexy, and necropsy revealed old arteriosclerosis or old foci of softening of the brain manifestly antedating the accident. Such a combination imposes scepticism and criticism. Some of the cases illustrate the consequences of trauma in an already pathologic brain, as for example in a case of death a month after a fall on the back of the head. Necropsy showed accumulation of blood between the meninges, but there was evidence of old pachymeningitis. The latter entailed the hemorrhages which proved fatal, but there would probably not have been any hemorrhages from the previously latent pachymeningitis if it had not been for the fall. His seven patients were all elderly except one robust man of 38 who developed rapidly fatal tuberculosis after he had been confined to bed from the consequences of a contusion of the brain. The direct importance of the trauma in this case was unmistakable. His cases demonstrated further that an actual traumatic injury of the brain can be accompanied or followed by a secondary neurasthenia or hysteria.

Temperature Changes in General Paralysis.—Lie is chief of the Dikemark Asylum and he relates that there were thirty-eight deaths from general paralysis there in the last three years, but none from gangrene. In four cases the temperature charts of the last month before death recorded extremely low temperatures. In one case it declined to 26 C. in five days; in another case from 35.5 to 22 C. in twenty-four hours. In another case the decline was more gradual, dropping to 25 in the course of eight days. The temperature was taken in the rectum each time. One of the above thus breaks the record for low temperature in general paralysis, with his 22 C.

Purpura.—The first part of C. Johannessen's article was reviewed in this department, page 318. He here discusses the hemorrhagic purpuras of the idiopathic type with essential thrombopeny, pseudohemophilia. A typical case is described which illustrates the wide divergence of the clinical picture from that with anaphylactoid purpura, analyzed in the preceding instalment: the temperature persistently normal, never any joint or colic pains, and the blood showing lymphocytosis and leukopeny, with from 2,000 to 4,000 blood platelets. The chronic Werlhof's disease in this case was intermittent, but in a second case described the disease was continuous, although milder. The acute form develops like the chronic form but generally terminates fatally in from two to four weeks. He reports a case in a male infant, 2 years old, in which the mother noticed a purpuric patch on the right thigh and left leg; the child seemed normal otherwise. The patches increased in size and number and the next day the child vomited once and there was some blood in the vomit. The child died the third day. Besides these chronic and acute forms of typical Werlhof disease, other diseases may present symptoms resembling those of Werlhof's disease, but examination of the blood may reveal lymphatic leukemia as in a case described in a young child. A toxic symptomatic form has also been observed with chronic poisoning, especially benzol poisoning.

The prognosis is grave for the acute forms but in the chronic cases it depends on the treatment. Oversight of the condition is best realized by frequently repeated count of the blood platelets. The assumption of a myelogenous origin, which he accepts, calls for arsenic treatment. This is said to rouse the bone marrow from its torpor and stimulate production of platelets, but he never witnessed any appreciable benefit under arsenic. Splenectomy has given promising results but it is still in a tentative phase, and the ultimate outcome is unknown as yet. Gelatin by mouth and subcutaneously should be given a trial, to ward off or arrest hemorrhage. Von Velden advocates repeated injection by the vein of 5 or 10 c.c. of a 10 per cent. solution of sodium chlorid. To increase the number of blood platelets is the main thing, and the first and foremost measure for this is direct transfusion of blood. His first case testifies most strikingly to the benefit possible with this; it serves another purpose also in restoring the blood lost in the hemorrhages. Fonio has demonstrated the feasibility of centrifuging out the blood platelets and injecting them alone or an extract of platelets. With hemophilia there is also insufficiency of blood platelets. It usually begins about the age of 2, and at 7 or 8 the joints may show the typical hemophilic lesions, which so often get labeled tuberculosis or syphilis. A history of a hemophilic tendency may be the only clue. In treatment, rest, compression and cold packs, with cautious use of the joints after a few days. Cautious massage promotes absorption. Absolute disuse favors contracture; too forcible measures are liable to cause bleeding in the joints. General strengthening and symptomatic measures are indicated, the same as with Werlhof's disease, with extract of blood platelets in particular.

Examination of the Heart.—Salberg in dubious cases has the patient recline for a few minutes and then stand up. The heart sounds become much more instructive when examined in this way.

Sarcoma of Iris.—Berner states that the sarcoma removed from the lower part of the left iris seemed to resemble those in Wood's and Pusey's cases. There has been no sign of recurrence in the case reported during the two years to date, and vision is 5/10 without glasses.

Abdominal Reflexes.—Monrad-Krohn's monograph is based on examination of 472 cases at various hospitals for nervous and children's diseases at London and Christiania. He gives eleven pages of bibliographic references (titles in full), with a five page summary in English. Among the facts he has ascertained are the increased intensity of the abdominal reflex in paralysis agitans and in chorea, and the attenuation in hysteric hemihypo-esthesia. The normal abdominal reflex is homosegmental, and it may be epigastric, or above, including, or below the umbilicus. There is also the periosteal deep reflex of the costal margin. The abdominal reflexes are so constant in health and give such important information in pathologic conditions, as he describes in detail, that testing this reflex must be regarded as an important link in the chain of routine general and neurologic examination. A heterosegmental abdominal reflex points to partial paralysis of the abdominal musculature without pronounced sensory deficit phenomena. He theorizes that the reflex arc reaches up to the brain, and that it is under the control to a certain extent of that part of the nervous system which is damaged in paralysis agitans and chorea.